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Sanitation in the Holy Land

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American Journal of Public Health
and THE NATION'S HEALTH

Volume 25 September, 1935 Number 9

Sanitation in the Holy Land*

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New York, N. Y.

IN the short span of 15 years, historic Palestine has emerged, from a war-torn, oriental country infested with malaria, trachoma, and other infectious diseases, as one of the very few prosperous sections of the world. The illuminating story of this remarkable metamorphosis is one of consistent progress in public health and sanitation matching economic development, step by step. Credit for this achievement is due the British Department of Health of Palestine, Louis J. Cantor of New York City who was its first sanitary engineer, and the Hadassah, Women's Medical Auxiliary of the Zionist Organization of America.

Before their retreat in 1917–1918, the Turkish Army, following the example of other armies during the great war, deliberately wrecked the country, ravaging the homesteads, and conscripting the population or sending it into exile, leaving behind the weak, the old, and the very young. The land was denuded of stocks of cattle and horses; orange groves were ruined by lack of irrigation; and cultivated fields were abandoned.

The war's depredations in Palestinian towns are mirrored in the harrowing experiences of Petah Tikvah. Forty years before, that inspired Joshua Stemper, who was loved even by his opponents, had walked from his birthplace in Hungary to Jerusalem and, though the son of a Rabbi and untrained as a cultivator, had founded the colony of Petah Tikvah. It developed splendidly under the Palestine sun, the transformation of every parcel of sand into bearing vineyards and orange groves arousing great joy among the educated but manually untrained young farm hands. Then came the war and the colony's tragic decline; the requisition of cattle and other possessions, and the ruthless cutting of trees by the Turks and the Germans to run their locomotives; the destruction of all crops by clouds of locusts making night of day; invasion by warring armies, twice by the Turks, twice by the English, and four times the scene of battle; the evacuation of the population and, finally, their return to empty houses in October, 1918. In the intervening months, the exiles were driven from place to place, sleeping in the open, sick and weary; their bodies unutterably filthy with sores and wounds; their every possession sold, lost, or stolen.

* Much of the foregoing information was obtained through the courtesy and assistance of Mrs. Cantor, the American Economic Committee of Palestine, and the Hadassah, for which the writer is deeply grateful.

In Jerusalem the Jewish population was in the most precarious position of all. Composed largely of old men and women devoted to study and prayer who had come, with insufficient funds, to spend their last days in the Holy City and to be buried on the Mount of Olives, scores died of sheer want after their monthly subventions from Europe and America were cut off by the war. Serious outbreaks of disease reduced their number still further, leaving weak and dispirited survivors. Their vicissitudes reduced the Jewish population in the city to 32,000 early in 1919, half what it was before the war, and among them approximately 1 in every 10 was an orphan.

Immediately following British occupation of Jerusalem on December 11, 1917, the Occupied Enemy Territorial Administration (O.E.T.A.) was organized, with military governors at Jerusalem and elsewhere; food was brought by military transport, and merchants were permitted to import goods from Egypt via the military railway. Among the most urgent tasks of the O.E.T.A. was the development of a Medical and Health Service in the country ravaged by war and decimated by disease. Few traces were found of any preëxisting government health service—in theory there existed under the Ottoman Code the outline of an organization which would have served the primary needs of the country, if in practice it had been adopted but, beyond the employment of part-time municipal doctors on small retaining fees, little was done. Within a year the new Department of Health, assisted by the Hadassah Medical Unit, and for a time the American Red Cross, established and actually conducted in nearly all the larger towns their sanitary services, instituted an epidemic and disinfection program, laid the foundations of an anti-malarial organization embracing all towns and colleges, and founded a central hygienic laboratory at Haifa, with branch laboratories at the government hospitals in Jerusalem, Jaffa, Gaza, and Nablus.

To supplement government health and social activities, the English agreed to the despatch of a Zionist Commission to Palestine to form a link between the British authority and the Jewish population and to coördinate their relief work and other efforts; also, to the sending of an American Medical Unit by the Hadassah to assist their coreligionists with urgently needed medical relief. Such is the story of the official existence of the present activities of these groups in Palestine in assisting not alone Jews but also Arabs and Christians in the daily amenities of life, particularly medical relief and sanitation.

With the American Medical Unit of 20 doctors and 20 nurses was a sanitary engineer, Louis J. Cantor, chosen because of his anti-malaria experience with the United States Government in the Panama Canal Zone and destined because of his inspired, unflagging, zealous efforts in the face of innumerable difficulties to become the pioneer sanitation engineer of Palestine.

On August 8, 1918, the unit arrived at Jerusalem while the world was still at war. The sanitary engineer was at once assigned to the 123rd Sanitary Section of the British Royal Army Medical Corps for direct army control of anti-malarial work, scavenging, and food establishments in Jerusalem. Noting that the overburdened hospitals were filled with malaria patients and the city saturated with mosquito propagating cisterns and water receptacles, Cantor asked for and received 6, later increased to 12, Jewish soldiers of the 39th Battalion, Royal Fusiliers, as sanitary inspectors. He immediately instituted a thorough search for all mosquito-bearing water containers, and began their oiling to prevent the innumerable eggs from developing in

the embryo stages in the vitally necessary water. Garbed in their uniforms, invested with the authority of the British Army, and conversant with Eastern ways and languages, the inspectors sprayed cisterns, cesspools, drains, leaders, water-jars, overhead water reservoirs, and rain barrels in gardens with a special crude oil mixture provided by the unit. Cursed alike by the Arab and the Jew who did not want their sweet-tasting water fouled with the oil, and at times showered with water and over-ripe vegetables by irate householders, the inspectors stoically proceeded with their spraying. In the case of an old woman, this tumultuous greeting of the inspectors was replaced with a quiescence almost of welcome. Upon investigation the paradoxical situation was solved. After the inspector sprayed the surface of the water in the open cistern which in common with most others in the city had a rope and pail but no pump, the crafty woman inserted a cloth, sopped up the oil and squeezed it into a vessel. Later she fed the reclaimed oil to her kerosene stove which is universally used for cooking in Palestine. Despite similar rebuffs, the results of this campaign were immediate and astounding; the number of malaria deaths in the city decreased from 113 in the last 9 months of 1918, to 35 for the year 1919, and to 5 for all 1922. When viewed in the light that for each malaria death there are hundreds of malaria cases, the reduction in human suffering in Jerusalem can better be appreciated.

But oiling was expensive and had to be continued weekly. To exclude the female mosquito from the water, a movement was begun to persuade the householder to cement the top of his cistern and attach a hand pump. The few well-to-do did so at once, but the poor could not afford the expense involved. Cantor induced the Hadassah to purchase 10,000 hand pumps and

Laying sewer line in Meashorim

make them available for general distribution through the government at a nominal charge. This action proved of incalculable value. But there were still many who persisted in the customary use of the open cistern. At last it was necessary to resort to sterner measures. On November 16, 1919, a notice was published in the *Official Gazette* that—

> The public water supply is only available for the Army, Railroad, Institutions, and necessary trades. Therefore, it is necessary for the public to use cisterns and maintain same with cover or pump in a sanitary condition on fine of £5 or imprisonment of one month; and the Military Governor, if he thinks fit, can have the work carried out and charge the expense to the owner or occupier.

Gradual enforcement of this order brought the desired results.

With his energetic sanitary inspectors, Cantor supervised the frequent collection of house, trade, market, and street refuse, loading it in bags atop donkeys—according to the practice of the ancients—hauling to dump grounds

outside the city and burning it in small incinerators. In cleaning up the Jewish quarters, relief funds were assigned through the Zionist Commission to provide work under Cantor's direction for the unemployed old Jews ranging in years from 40 to 70. At the maximum, 110 of these laborers were employed.

To overcome the carefree public custom of throwing garbage into the street oblivious of passers-by and at times spattering them, or dumping it in open kerosene tin cans, the Department of Health on Cantor's recommendation required the householder to provide suitable garbage containers. A model garbage can with cover was made and displayed in his office and throughout the city. This was followed by a campaign of persuasion resulting in their widespread installation. The public demand from all Palestine for garbage cans is now being supplied by a factory in Tel-Aviv.

The Hadassah Medical Unit was originally housed in the Baron de Rothschild Hospital at Jerusalem. Immediate renovation of this hospital and construction of additional service buildings was the first of Cantor's major assignments. A hurried survey of available means for this building project was disheartening and showed, in the words of Cantor's diary,

> Labor available—old men and boys (able-bodied men in the army), no mechanics nor skilled workmen; materials—stone (badly dressed), lime (not burned), wood (not obtainable), roof tile (demolish buildings), water supply (cisterns, goat skins, and petrol tins), glass (priceless), paint (expensive), tin (use petrol tins), timber (dismantle old buildings); transportation—porters for lumber and glass, donkeys for sand and stone, camels for tiles and cement, wagons for lumber, cement, and stone, and automobiles for general duty.

But Cantor undaunted carried on. From the wood of the 1,883 cases of freight containing the Unit's supplies which arrived in September, chairs, tables, hospital shelving, and other articles were made. Finding among his soldier inspectors one with a working knowledge of plumbing, he taught a few local tinsmiths—the only skilled laborers available—how to do simple plumbing operations. Masons and carpenters were developed to carry out his ideas. Supplies were obtained by dismantling old buildings, from the Unit's freight when available, by purchase from the British Army or the American Red Cross, or by personal trips to Cairo. From all this there was developed in a short time a completely renovated main hospital building having clinics and dispensary provided with modern hospital equipment, such as X-ray and disinfecting machines, and with water for a hot and cold system for baths, showers, lavatories, and sterilizers; latrines; a laundry building; a morgue; storehouse; garage; laboratory; nurses' home; and headquarters.

Next came the cleaning and renovation of existing Jewish hospitals, orphanages, schools, and other public institutions including Mikvehs or baths. To the consternation of the orthodox Jews, the bathing pools in the Mikvehs were treated by the inspectors with bleaching powder to destroy infectious germs, and bathers contrary to life-long habits were required to soap themselves and take a thorough shower before entering the pools. To show orthodox students that the clusters of long hair growing on their cheeks in the form of "payas" or side-burns and acting as dirt and disease-germ catch-alls could be maintained in a sanitary manner despite the religious prohibition against cutting them with a knife, Cantor grew them for a year and had them trimmed with scissors. Because of increasing public demand for modern plumbing and Cantor's persuasion and unfailing assistance, the local tinsmiths and hardware stores, within a year and for the first time in the history of Palestine, made available to the public the various

appurtenances known as modern plumbing. Today well equipped stores in Jerusalem and elsewhere in Palestine display the products of large sanitary supply firms of both Europe and America, and a factory in Tel-Aviv is manufacturing sewer tile.

At the same time that Cantor commenced his sanitary work in Jerusalem, Dr. S. M. Schmidt of the Unit originated similar work in Jaffa, all under the authority and supervision and with the coöperation of the O.E.T.A. The first operation was a house-to-house medical and sanitary survey which revealed the need for scavenging, inspection, distribution of insecticides, and rat and mouse traps, screening, and oiling of wells. About 1,600 wells were sprayed. After a considerable number of men had been trained as sanitary inspectors, including some for anti-malaria operations in Haifa, the Unit was charged with the sanitation of 10 military camps and billets, and was assigned by the Municipality of Jaffa to the inspection of cafes, bakeries, barber shops, and other public buildings. Latrines were set up for the use of the Egyptian labor corps employed by the O.E.T.A. In a few months the persistent oiling caused a great reduction in the number of malaria-mosquito infested places.

About the middle of October one of Jaffa's sanitary squads was sent to Tiberias to combat the outbreak of cholera which before its termination caused 60 deaths. The source of infection was the water supply from the Sea of Galilee on whose shore the town is located. The lake was polluted with street washings, direct defilement by persons defecating in it, bathing and fishing. Jugs and kerosene tins were filled with this water, which was practically the only supply at the time, and carried to the houses. In controlling the epidemic, the British fenced off the entire city shore line with a wire netting, leaving but five stations for taking water. These were constantly protected against pollution. When a water carrier left one, a sanitary inspector placed bleaching powder in the container. Ten houses on the lake were evacuated to guard against pollution of the water. Empty lots were closed up, streets

Sewage treatment plant in Wady Joz

cleaned, and latrines and other nuisances abated. Anti-mosquito measures were adopted and carried through rigidly with the backing of the O.E.T.A.

Unfortunately, with the termination of the epidemic, the city resumed its ancient customs. An inspection by Cantor early in 1922 disclosed general sanitary negligence; the barricades to the lake had almost all been removed; the vacated lake houses opened; animals were being cleaned at the point of water supply; mosque latrines were emptying into the lake near the water pump; and the water was being taken at all points without any supervision. Action was quickly instituted to remedy these insanitary conditions.

Another sanitary squad was sent by the Jaffa Unit to Safed early in 1919. Schools, orphanages, and other public buildings were cleaned; necessary scavenging accomplished; houses and yards inspected; and cisterns oiled, sealed, and marked.

When Dr. Schmidt left the country in July, 1919, Cantor was placed in charge of all the Unit's sanitary activi-

ties in Palestine. Gradually, as trained personnel were provided for municipal sanitary services, the Unit's efforts were concentrated on sanitary improvements and anti-malaria activities in the Jewish agricultural colonies. Daily inspections were made of houses, yards, and water supplies of all the colonies, and a house-to-house educational program was conducted. In view of the large and increasing immigration through Jaffa, an immigrant delousing plant was established there. Immigrants were distributed among various labor camps whose sanitation was supervised by Cantor's inspectors.

In the meantime the O.E.T.A. through the Royal Engineer Corps made a health survey and census of Jerusalem. In the Jewish quarters this was accomplished by the government-loaned inspectors. With a view to installing a new system to improve the offensive sewerage conditions, cistern data were obtained, first for the northwestern section, and then the old or walled city. Certain cisterns would be used to flush proposed sewer lines, due to the inadequate city water supply.

Upon the survey's completion, Cantor was appointed sanitary engineer in charge of design and construction of the sewerage system for the northwest district, in addition to his other activities. The Zionist Commission donated $50,000 for this project, and the O.E.T.A. granted $10,000 for the treatment plant. Surveys were made, the system was planned, and the project presented to the city and O.E.T.A. for approval.

But at this point the scheme was almost defeated. When permission to purchase the land for the treatment works was sought from the Arab Mayor, he at first refused. His father and grandfather had lived in Jerusalem and had found a cesspit satisfactory, why should there be any change? Finally, approval was granted.

During its construction innumerable difficulties were overcome. Supplies had to be purchased in Cairo and transported to Jerusalem. Skilled labor had to be procured. Arabs, the only workmen practised in the use of dynamite, were employed under an experienced Arab foreman in blasting a trench for the sewer pipe through the rock of the streets of the old orthodox Jewish quarter, Meashorim, meaning Hundred Gates. The 100 gates did not let in light or clean air, though. The streets were lean and crooked, the houses decrepit. The smells were of the vilest and most persistent.

Then followed a great religious controversy. True Arabs observe their day of rest on Friday, the orthodox Jews on Saturday. Not to lose time or money in construction, blasting was continued even on Saturday when Jewish services were being conducted. The Rabbis complained bitterly, to Cantor most of all, for he was in charge. But he could not delay the work, the funds were insufficient to provide for the extra expense involved. So the Rabbis solemnly proclaimed "Herem" (Hebrew word meaning outcast of the community), thereby excommunicating Cantor who was of their faith, forbidding God-fearing Jews to have anything to do with him. It was not until a year later, after the system was working and the offensive drainage conditions had been removed, that the Rabbis and the whole district publicly acclaimed Cantor for this achievement.

So the work progressed, the treatment plant was installed, and the completed project was turned over to the Municipality of Jerusalem in an official ceremony on November 12, 1920.

Somehow the troubles did not cease. Because the funds were inadequate and the works were to be temporary, until the large city sewerage scheme was perfected, the treatment plant was placed in the Wady Joz. This location was just below the hill on which were some

fine residences including the Mayor's and several English officials'. Complaint of offensive odors from the treatment plant ascribed to poor construction was lodged with the Mayor. He in turn complained to the British Government, making of it a political issue, to the effect that the Jews were trying to poison the Arab neighborhood and were creating a nuisance involving the spread of disease. So persistent and so influentially pressed was this complaint that the matter became a government issue. The government requested of Egypt that a sanitary engineering expert be sent to Jerusalem to investigate the situation. This was complied with and the sanitary engineer in time made the investigation and reported that the treatment works should be located farther down the valley. But money was not available for this; so the plant has remained in the same spot to this day. However, with the construction of the larger drainage system begun in 1932, the temporary works will be replaced by an adequate plant in the Valley of Kidron.

At present the only rivulet at Jerusalem is the effluent flowing from the sewage treatment plant in the Wady Joz. Strange to say, Arab women who enjoy picnics hold these functions beside this stream where it passes through the valley of olive trees and vegetable gardens.

Another example of the insanitary conditions under which the people of Jerusalem lived at the time of the O.E.T.A. is furnished by the memorable experience with the greatest snowfall in the city in 40 years. On February 10, 1920, there began a snowstorm without let-up until the 13th. More than 4 feet of snow fell. No one left his house the first day. On the next Cantor, knowing of the sick and poor in the Jewish quarters and the damage that would follow when the melting snow would flood the lowlands, endeavored to enlist help from the Rothschild Hospital. However, the attendants who were orthodox Jews refused to assist in removing the snow. They said they could not remove what God had sent from Heaven, it would be sacrilegious. But the doctors saw the need and cleared paths through the snow from different pavilions of the hospital. Cantor was placed in charge of relief work by the Unit. Doctors were assigned to various districts to visit the sick. Finding the bakery closed and without flour, Cantor asked the Governor for and obtained the loan of animals from the Department of Health, purchased flour, brought it to the baker, and then distributed the bread to various snowbound houses, using the willing Maccabean youths with donkeys. From the British Army he obtained soldiers to clear paths in the snow.

The snow was so heavy that the overburdened roofs of the Unit Nurses' Home and many other houses collapsed. All night long on the 12th, the doctors worked the pumps at their home and the hospital discharging water from the overflowing cisterns beneath the dining rooms to prevent flooding of the buildings. Snow was removed from house roofs. Weakened buildings were braced. Dwellers in low sections which might be flooded were moved to higher sections and temporarily housed. By the 14th paths were extended to the main streets, ditches opened for the melted snow water, families rescued from falling buildings, and a thorough canvass made of the districts, using the men and horses obtained from the O.E.T.A. On the next day, Sunday, with the snow generally melting, the city was subdivided into districts, 43 pumps with crews assigned for emptying overflowing cisterns, and labor gangs designated to help the sufferers, reinforce the weakened buildings and demolish dangerous dwellings with ropes. Over 100 workers cleared the

debris in the old city where some buildings collapsed in the week following the snow storm, killing several occupants. In this manner the great storm passed, leaving comparatively little public suffering and flooding of buildings in its wake.

Street of Prophets under snow, Jerusalem

Other activities of the indefatigable Cantor in the first 2 years may be likened to the development of an army to combat disease, including the training of chauffeurs in the hospital garage and of sanitary inspectors; conducting evening technical courses for developing draftsmen, foremen, and surveyors; and operating an employment agency and relief department for the Unit.

With the installation of the British Civil Administration on July 1, 1920, Cantor was appointed Sanitary Engineer of the Government Department of Health in recognition of his achievements. Without an office or furniture except for a table, he borrowed a chair and some paper and outlined his organization for the Sanitary Section. In time this included an assistant sanitary engineer, a draftsman, plumbing and sanitary inspector, a clerk, and a Museum of Sanitation. Its multiple activities included anti-malarial measures; sanitation of all government and public buildings; preparation of plans for model dairies and food establishments of all kinds; coöperation with municipal and village governments in water supply, drainage, scavenging, and supervision of trades and industries; and general dissemination of sanitation information.

One of the first accomplishments of the new Department of Health was the appointment of a permanent Anti-Malarial Advisory Committee in September, 1920. For centuries malaria had decimated the population and barred the development of large tracts of fertile land. At times it assumed epidemic magnitude wiping out in the space of a few months the populations of whole villages. Few regions in Palestine were wholly free from it before the war. Every autumn hospitals in Jerusalem and most of the other towns were crowded with malaria patients. Anti-malarial government measures were carried out by the Sanitary Section. Necessary funds were provided and other assistance was rendered by a Survey Section of the International Board of Health and the Malarial Research Unit of the Jewish Joint Distribution Committee.

The Rothschild Foundation drained the Kabbara swamp between Jaffa and Haifa. Jewish agricultural colonies and towns drained nearby marshes and pools. Wells were covered. By 1925, more than 105 miles of drainage canals and ditches affecting 5,574 acres had been constructed, and 45,000 wells, cisterns, and cesspits were being oiled regularly. The malaria mosquito had disappeared from all the large cities except Haifa, and new cases of malaria were rare in them. A vivid picture of the transformation accruing from these efforts in the important Valley of Esdraelon is given by Sir Herbert Samuel, first English High Commissioner, in the following words:

> When I first saw it in 1920 it was a desolation. Four or five small and squalid Arab villages, long distances apart. . . . For the rest the country was uninhabited. There was not a house, not a tree. . . . The River Kishon, which flows through the valley

and the many springs which feed it from the hillsides, had been allowed to form a series of swamps and marshes, and, as a consequence, the country was infested with malaria. Since then, 20 villages have been founded with a population numbering 2,600. . . . All the swamps and marshes have been drained, and cases of malaria are proportionately rare. The wooden huts of villages . . . the plantations of rapidly growing eucalyptus trees . . . fields of vegetables or cereals cover many miles of land.

Today in most Palestinian cities malaria has been brought under control by the Department of Health. Persistent drainage measures have practically conquered the disease in Jewish and neighboring Arab villages, while in non-Jewish areas (Acre, Huleh plain, and the region east of Beisan) malaria is still rampant. In rural and certain urban communities, much remains to be done.

Through efforts of the Department of Health, a Town Planning Ordinance was passed in 1921 establishing a Central Town Planning Commission to supervise new building construction in town areas. These buildings were to be provided with approved types of sanitary facilities. Under this ordinance, local town planning committees were formed in Jerusalem, Jaffa, and other cities. Model sanitary by-laws prepared by the sanitary section were approved by the commission for adoption by the cities, and a model plumbing code similarly prepared was published in the three official languages—Arabic, Hebrew, and English—by authority of the Commission.

Finding unsatisfactory plumbing installations being made by tinsmiths, locksmiths, and blacksmiths, due to the great scarcity of qualified plumbers, Cantor established a plumbing course in Tel-Aviv in 1926. At its conclusion, an examination was held. Thirty-five qualified to practise as plumbers, and 60 men were classified as assistants. Because of its success it was established as an annual institution. Similar courses were given in Jaffa in 1928 and in Jerusalem and Haifa in 1930. In 7 years, 85 candidates were awarded certificates to practise as plumbers. For instructing classes in plumbing at the Haifa Technical Institute, Montefiore Technical School in Tel-Aviv, and the new Y.M.C.A. in Jerusalem, syllabi and sets of drawings of standard sanitary installations were provided. Defective plumbing material foisted on the country at the beginning was gradually replaced. So much good resulted from these efforts, that the Director of the Department of Health in 1929 stated:

> The training and examination of plumbers undertaken by the Sanitary Engineer of the Department has had considerable influence in the improvement in house drainage.

An interesting experiment in social hygiene and domestic medical education was successfully encompassed in the first Palestine Health Week, November 23–30, 1924. The idea originated with the Hadassah which bore all expenses, was fostered by the Government,

Part of sewage treatment plant showing screens for removing coarse floating matter

and assisted by 25 leading local groups. Through the Government Department of Education, teachers talked in 716 schools in 353 cities, towns, and villages, on the daily health topics—Health, Baby, Food, Microbe, Recreation—and distributed pamphlets in Arabic and Hebrew to the pupils. Lectures and demonstrations were delivered at meetings of parents. A contemplated Prize Baby Competition was cancelled because of the superstition prevailing among mothers that personal exhibition of their babies would work to their physical harm.

A Health Exhibition to exemplify by demonstration and models the lessons indicated by Health Week was opened in Jerusalem on November 17, 1924, by the High Commissioner and visited in the 2 following weeks by no less than 34,090 people, including 4,830 children, an extraordinary attendance mark for a city of 65,000. The Government loaned the Sanitary Engineer, as Chairman of the Exhibition Committee, and his staff for 3 weeks to prepare and supervise the exhibition material. The Department of Health assisted in furnishing demonstrators in charge of several of the 14 sections and loaning equipment, including a complete mobile unit for combating disease epidemics. A special Harem Day was designated for Moslem women when only women demonstrators and guides were present. Many attended, lifting their veils and touching the exhibits, being deeply impressed through such physical handling.

Early in 1925 at the request of the Zionist Commission, the Department of Health sent Cantor as its representative on their committee to advise on the sanitation of all Jewish colonies in the Emek Valley. Many insanitary conditions were found, particularly the privies. Various improvements were recommended in a private conference with the colony leaders. Despite the seeming fact that Arabs were immune to certain infectious diseases and Jewish immigrants not, these recommendations were not acted on. It was claimed they would prove a hardship on the colonies, were not required of the Arabs by the Government, and would be unfair. That summer a severe outbreak of typhoid fever occurred among these colonists, causing 192 cases and many deaths.

From the very beginning of the British occupation, water was scarce in Jerusalem, despite the 5,300 cisterns. To provide sufficient drinking water for the army, a pipe line was laid for over 13 miles, from Solomon's Pools to the city. Still the supply was insufficient. In 4 months the British Army Engineers rehabilitated the old unused acqueduct constructed by Pontius Pilate and brought water through its 40 miles of winding conduit from Ain Arrub springs. As abnormally low rainfalls decreased the supply, in 1923 water was transported by motor lorry from Nablus and other towns. Dirty Arabs peddled water from donkeys laden with six 4 gallon kerosene tins filled at the large cistern in the sacred Haram Sharif Area, charging 25 cents per tin. Those unable to pay these exorbitant prices waited patiently in queues at neighborhood standpipes from early morning until the special attendant's arrival to obtain the two tins of 8 gallons allotted each family every 2 or 3 days at a cost of 1 cent for 4 gallons. Only those possessing a ticket obtained from the Municipal Government showing the number of members in a family were provided with this water. The fee was used to pay the attendant's salary, there being a number of them who for one hour during the appointed day turned on the water from a neighborhood standpipe.

To relieve the sorely pressed city further, the Government in May, 1925, passed the Urtas Spring Ordinance to provide water from the Arab spring of

Urtas Village for a temporary period of 12 months by the construction of suitable works and pipe lines to Solomon's Pools. The city took only part of the water from this spring, the villagers having more than sufficient for their limited domestic wants and for irrigating their apricot orchards, vineyards, and fields. Compensation was made by the city on account of complaints of the villagers of possible damage to their crops from such diversion.

Nevertheless the ordinance proved a great shock to the villagers. They claimed the spring was theirs, and no one had a right to usurp their property. They said the water was taken for Jewish building purposes in Jerusalem, and pointed to the large amount of building in progress at the time to substantiate this accusation. The Executive Committee of the Palestine Arab Congress sent a long communication of protest to the Secretary of State for colonies in London. The inhabitants of Urtas brought suit to restrain the Government from using the spring. They claimed the ordinance was void because it failed to respect Arab rights guaranteed by the Mandate. The case came before the Supreme Court of Palestine. The Court held the ordinance repugnant to and inconsistent with the Mandate, because it failed to safeguard the civil rights of all the inhabitants, and declared it invalid. Appeal was made by the Government to the Judicial Committee of the Privy Council which reversed the Court's decision regarding the specific situation, holding that "there is no suggestion that any such discrimination is to be found in the Ordinance now under consideration."

The rainfall proving inadequate in 1926, water was hauled by train from Lydda. In later years additional supplies were piped from nearby springs, Ain Farah, Ain Fawar, and Wadi Kelt, but to little avail. The rapidly growing

Scavenging cesspools—June 8, 1919, at Orphan Relief Department. Insanitary nuisance to be replaced with Merryweather vacuum collection system.

population and low rainfall were too much for the available supplies. Finally, in accordance with the recommendations of the Municipal Water Department, concurred in by the Department of Health, a new supply from Ras-el-Ain springs at the head of the Auja River north of Jaffa was approved, money provided, and construction of the necessary pipe line and pumping stations begun in 1933. This water will be pumped 37 miles and raised 2,635 feet at a cost approximating 1½ million dollars, and will be sold to the public at the comparatively high price of 10 or 11 gallons for 1 cent (in New York City the householder pays that for 80 gallons).

It was Cantor's practice when finding insanitary conditions in cities, to try out remedial measures in Tel-Aviv or elsewhere. When they were successful, he would endeavor to have the Department of Health adopt them for the country. Gradually, as a result, the cities undertook, with municipal funds, such sanitary services as the provision and maintenance of a scavenging staff and equipment, street watering, public drainage and water supply. The Department of Health was strongly opposed to past practices of letting contracts for scavenging and other munici-

pal services. All such sanitary services were inspected regularly whether in towns or villages. However, to insure more constant supervision in the larger cities, Cantor recommended the appointment of Municipal Surveyors. This was approved by the Government, and Municipal Surveyors were provided in Jerusalem, Haifa, and Jaffa. In Tel-Aviv this supervision was arranged for through a qualified plumbing inspector. For villages his recommendation of the appointment of a Local Council to supervise sanitation was adopted, and several such bodies were designated.

Finding that trade and industrial establishments were increasing rapidly without due consideration of sanitary principles, the sanitary section worked for a law to provide necessary safeguards. In 1927 an Ordinance for Licensing and Control of Trades and Industries was enacted with general supervision over its application vested in the Department of Health, more specifically, the Sanitary Engineer's Office. Before a new building coming under this classification was erected, the plans were laid before this Office for approval as to structural, safety, and sanitary provisions. Before it was placed in operation, it had to receive such approval again, always after a personal inspection. In the case of a cinema in Jerusalem, the builder complained because of the requirement of providing a suitable number of separate closets for men and for women. He stated his theatre was not for that purpose and that the requirement was more stringent than in Paris. In due time, he was persuaded as to the desirability of the requirement.

Similarly, the Sanitation Section instituted activities tending to provide good water and drainage facilities and cleanliness in public restaurants, hotels, and other food establishments. Such efforts were directly reflected in the decrease in dysentery cases in Petah Tikvah from 63 in 1927, to 13 in 1930. The Director of the Department of Health, referring to this work, said in 1930:

> The control of drainage, ventilation, and sanitary conditions in hotels, restaurants, and cafes, which, in so many countries in the East are the source of disease, has reduced to a minimum the apprehensions of tourists and visitors who are so important a source of the revenue of the country, and has developed in the proprietors and their local clientele a sense of cleanliness and hygiene unknown a few years ago in Palestine. The department has little difficulty now in obtaining reasonable sanitation in old establishments, and a high standard in new. The people themselves are beginning to demand it.

NOTE: Louis J. Cantor, whose work in Palestine is described in this paper, died there on January 8, 1933. That he was the father of sanitation in the Holy Land, no one can deny. Colonel Herron, Director of the Department of Health, summed up Cantor's achievements at the time of his death in these words: "His wide and accurate knowledge of a great variety of subjects dealing with Public Health have been of the greatest value in guiding developments in Palestine on correct lines.

"His splendid work is reflected especially in the very remarkable improvement in the plumbing, drainage, and sanitary installations in private and public buildings and in trades and industries, which has been such a feature throughout Palestine and which has so effectively reduced the incidence of preventable diseases. His achievements will live after him."

School Health Problems Through the Years: Boston Public Schools 1635-1935

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THIS year is of historical significance in the educational world since it marks the 300th anniversary of public school education in America. Here in Boston in the year 1635, only five years after the landing of the Puritans, Boston Latin School was founded. As Supervisor of Health Education, I was particularly interested in the health history of the Boston Public Schools through the years. An intensive study of the original records brought to light some very illuminating points on health.

The evolution of the Boston Public Schools from the first simply constructed building in which the Puritan scholars of early Boston assembled to study Latin and Greek, to the imposing modern structures, is replete with many examples of the progress made in safeguarding and supervising the mental and physical welfare of the pupils. In fact the progress made closely parallels the improved mortality and morbidity status of Boston.

The first two centuries of Boston's growth saw but few schools and a comparatively small school population. From 1635 with an enrollment of 75 scholars,[1] to 1700 with a school population of approximately 320 scholars assembled in 3 buildings,[2] the school system grew, until 1800, when there were about 1,100 scholars housed in 7 structures.[3] The present system comprises over 325 school buildings with an approximate enrollment of 140,000 pupils, a school enrollment larger than the total population of one far western state.

For the first three-quarters of a century, school work consisted chiefly of stressing the classics so that the young scholars might be acquainted with the Scriptures in the original. Very little attention was given to the hygienic conditions of school surroundings or the physical welfare of the scholars. Most attention was given to the imparting of knowledge rather than the conditions under which the knowledge was imparted. The general welfare of the citizens and pupils was in the hands of the Selectmen.[4] It is of general educational interest to know that the first public health officer in Boston was Paul Revere.[5]

Keeping the footpaths free from refuse, fear of fire, and the pestilence, as smallpox was called, were the real community health and safety problems confronting the Selectmen of Colonial Boston.[6] But about 1700, the Town of Boston was outgrowing its village atmosphere; streets were beginning to replace footpaths; the first rudely constructed homes were giving way to a more substantial type of structure, with a semblance of some architectural design; and the people were adopting a more social point of view.

Meanwhile, smallpox had become a

major health problem. Epidemics were becoming frequent. In desperation, the Selectmen issued an order on March 9, 1729, encouraging inoculation against this pestilence.[7] This order did not seem to carry much weight with the parents of the school children or the citizens in general, for the warning was not heeded. A heavy outbreak occurred in 1752, and nearly 1,800 persons moved out of the town to escape its wrath.[8] Immediately the question of inoculation was revived, and for a short time there was a hospital for this purpose on Noddle Island in Boston Harbor. But memory is short lived, and soon settlers flocked to Boston in such numbers that in the second decade of the 19th century (February 23, 1822) the town government had given way to a city form of government.

Shortly after this event we find the first official attempt to use the schools to overcome disease problems. In 1827, the school committee voted the first compulsory vaccination regulation for school children, which directed the master "to ascertain by probable evidence that every child who is offered for admission at school, shall have been secured against contagion of smallpox. And no child not so secured shall be received unless the school committee shall order such child to be received."[9] The theme of this regulation is now found in some 16 state laws on vaccination.[10]

EARLY SCHOOL BUILDINGS

The early school buildings were simple structures, usually of wood, and devoid of architectural style. The interior arrangement of the school was vastly different from a modern building. The classroom was one large room with all classes assembled together. There were no blackboards, no maps, no pictures, nor were there window shades. There were neither extra rooms for recitation nor even special closet space for clothes; these were later improvements.

The desks, with compartments for quills and books, were made of rough boards and the seats were without backs, so placed as to face the light. It was not until years later (about 1720) that an enterprising master concerned with the visual welfare of the scholars considered turning the benches around so that the light might come from behind. Then we waited a century and a half for the appearance of the commonly accepted "left hand" theory of light from the rear and over the left shoulder.

Garments and storm accessories were hung on tiers of hooks between the windows. The streams from the wet clothing ran along the floor and provided amusement for the scholars, and worry for the master, as the scholars tried to keep their feet above the water. The offensive schoolroom odor caused by the drenched clothing was a stormy-weather problem, particularly as there were as many as 100 to 200 pupils in each classroom.

There were neither bells nor radio to give the "No School" signal. Waterproof garments or rubber boots were unknown. The favorite foot protection was a pair of adult wool yarn, home-knit stockings drawn over the shoes.

The most important part of the school, at least during the summer season, so the scholars thought, was the old wooden pump. As it was generally located at the rear of the building, it was a familiar sight with its inviting dippers. Its constant use by the passing public created a problem for the masters. And in the period following the Revolutionary War we find in the records frequent complaints to the authorities as to "the evils arising from the free use of the pump, belonging to the schools."[11] This problem was solved by each pupil carrying his own drinking cup. On the final day of school it became customary for the

members of the last class in Latin School to celebrate their departure by kicking around their pails and cups until they were unfit for further use.

FIRST SCHOOL HEALTH SURVEY

The hygienic and sanitary conditions of school buildings did not receive any extensive consideration until the early part of the 19th century. In the year 1833 appeared the first survey of school conditions.[12] The school committee made a study and submitted recommendations concerning the physical properties of schools with reference to proper seating, heating, ventilation, and cleanliness. This report was unique for the times, as it stressed the relation of healthful and convenient places of instruction to mental success. The report of this survey with the suggested improvements was appropriately called "the charter of pupil welfare in public schools."

The beginning of the more modern type of seating began about 1842, following a petition of numerous parents, complaining of "the ever increasing prevalence of diseases of the spine among young females owing to the peculiar construction of the seats in which no support is provided for the back, and praying that an alteration of the seats may be made so as to remedy the evil complained of."[13] This petition was followed by the further complaints that most of the desks were from 3 to 4 inches too low. The school committee corrected this evil by the purchase of a newer type seat and also prepared regulations as to the correct method of adjustment.[14]

Proper seating in relation to lighting came to the front after the Civil War. In 1876 the school committee originated and supervised the changing of desks and chairs for "left hand light" or to admit the light from the left of the scholars.[15]

The introduction of window curtains "shades" in the latter 19th century was the first approach to the relationship of proper window lighting to visual health. Whether it was for economy or other reasons is not gleaned from the records, but window curtains were first installed in 1887 only on the southwest side of school buildings.[16] The health value of proper window curtains is attested to by all educators today.

The first artificial light was gas, introduced in 1870 "into those rooms in school buildings which are not suitably lighted."[17] However, gas was not generally used in the classroom to supplement the natural light. Its use was confined chiefly to dark hallways and basements.

The introduction of electricity in 1891, marked the beginning of artificial light to supplement daylight in the classrooms.[18] The growing emphasis placed on the visual welfare of the pupil, the use of the school building as a civic center, thus necessitating lighting for evening sessions, construction of schools among tall buildings cutting off the unobstructed sky, thus making the natural light inadequate at many times, are the reasons why artificial lighting has become an essential part of the modern school building.

HEATING AND VENTILATION

Heating and ventilation soon followed the seating phase of this first survey. In the evolution of heating systems from fireplace to oil burner there have been many changes.

The school fireplace gave way generally to the Franklin stove after the Revolutionary War. This stove was invented in 1744 by Dr. Benjamin Franklin for burning wood, in which he introduced the principle of heating the air by means of a double or hollow back. It was in the form of an oblong box with the front removed. The smoke escaped over the top of this flat chamber, and passed downward be-

tween it and the real back of the stove, and then into the chimney. This hollow chamber communicated underneath the stove with a tube opening into the external atmosphere, and a quantity of air thus passed through the flat chamber and into the room through small holes left in the sides. Here appears the first attempt to construct economical stoves combined with the principle of sanitary heating and air supply to enclosed rooms.[19]

Furnace heat was generally introduced at the turn of the 19th century. The hot-air-furnace system was the first to emerge from the era of closed stoves.[20] It was not until after the Civil War that steam heat was commonly introduced.[21] As early as 1846 there were printed rules and regulations "relative to the use of stoves, furnaces, and ventiducts in grammar schools."[22] Later in the same year the school committee considered the subject of ventilation of school houses. The outcome was an experiment in three buildings with "such apparatus as may be required to secure proper ventilation in winter and summer and make such alterations and arrangements of the furnace as may be required."[23] This experiment was really the beginning of modern ventilation in school buildings.

That the school committee considered this heating and ventilation problem serious may be gathered from the happenings of the next year. In 1847 the committee conferred with the architects and builders on all new school buildings. In addition a report was forwarded to the mayor, aldermen and council demanding that the suggestion of the school committee concerning heating and ventilation be adopted. This report to the city officials was followed by a special order to the masters and teachers containing very definite rules on ventilation.

Again in 1862 the question of ventilation "without draft or current of air" came to the front.[24] Then followed Robinson's and Main's systems which employed portable window ventilators, and they enjoyed popularity for some years. In 1886 the school committee on its own initiative supplied ventilating window boards on all windows of school rooms. At this period also, all radiators were guarded by screens. The first radical departure from the open window system was the Eureka ventilators, first installed in 1887. From then to the present day the field of school ventilation has seen many systems. In the last half-century, since the memorable report of the city architect in 1891 on all heating and ventilating systems, which listed those which fulfilled the requirements of statute, we have seen a gradual departure from the natural methods utilizing windows, doors, old-fashioned shafts in the walls connecting with the attic, and small apertures through the external walls of the classrooms to the modern varied modifications of the mechanical systems. In the recently constructed school buildings the school ventilating engineer has found most feasible a combination of direct radiation and mechanical means utilizing the unit ventilator.

To aid the teacher to participate better in classroom hygiene, thermometers were generally placed in the classrooms in 1885.[25] This device has served to make a more uniform temperature in the classrooms and to enable the teacher to keep the acceptable standard of "as near sixty degrees Fahrenheit to sixty-seven degrees Fahrenheit as possible."[26]

SANITATION OF SCHOOL BUILDINGS

Sanitation of school buildings forged to the front toward the close of the 19th century. This interest closely paralleled the movement for preventive sanitation in the field of public health which included the period from 1885

to 1910. This interest in preventive sanitation prompted the law passed in 1888 relative to "sanitary provisions and proper ventilation in school houses." This law was the aftermath of two surveys, carried on independently by the Boston Board of Health under Dr. S. H. Durgin, and the Massachusetts State Sanitary Police under R. F. Wade, complaining of the unsanitary conditions and also the poor ventilation of most school buildings.[27] The following year a special appropriation of $50,000 was made for sanitary improvements of all school houses.

Elimination of nuisances near school houses was the first extraneous problem. Stables alongside one school, and a house that was a contagious-disease problem nearby to a second, were some of the nuisances corrected. The early school sanitary problems were concerned mainly with outbuildings. The old-fashioned vaults of outbuildings demanded that the cess-pools be cleaned during the summer vacation. In 1889 there was a replacement by water vaults. With the innovation of the water vaults, a few schools experimented with the toilet facilities in the basement of the school buildings. However, when the Board of Health, in a survey of 1889, objected to this procedure on the ground of poor ventilation of toilets, it was halted temporarily. In the same year the old wooden urinals were replaced by stone and glass with the urinals partitioned off. Considerable attention was also given to the ventilation of the water-closets.

Shortly after, with the appearance of improved facilities, toilets were gradually introduced into the basements of the newer buildings. This gradual transfer of toilet facilities has continued until today no school building has facilities outside the protection of the main building. The modern plumbing improvements (fountains, etc.) make the school buildings of today a decided improvement over those of two centuries ago.

Until the opening of the Cochituate water line, most schools depended for their water supply on nearby wells. However, after 1848 when the Cochituate water was brought to Boston the schools were generally piped for water.[28] Water filters were the first experiments connected with this improvement. Today sanitary bubblers are found in all buildings. Hot and cold water satisfy the handwashing needs of the pupils.

SCHOOL MEDICAL PROBLEMS

Toward the end of the 19th century the school committee, realizing the tremendous importance of school-health problems, considered creating the office of medical inspector of schools to supervise all matters pertaining to sanitary conditions, including measures for prevention of the dissemination of contagious diseases. However, the city solicitor ruled in 1876 that the school committee could not spend funds for that purpose.[29]

Four years later, in 1880, the school committee again attempted to solve this problem by creating the office of instructor in hygiene. Again the city solicitor ruled against his performing the duties of medical inspector, although he could legally instruct in the normal and high schools.

Undaunted, the committee continued to urge this type of position. Finally, the office of instructor in hygiene was legally established in 1885 and continued until 1890.[30]

An interesting contrast in the methods of handling school epidemics in the 19th and 20th centuries is seen in one of the early decisions of the instructor in hygiene. Owing to the prevalence of scarlet fever among the pupils of one of the primary schools, the school committee closed the building from January 22 to February 1, 1886, on advice of the instructor in hygiene.[31] This is the

first instance of official closing of school due to an epidemic.

Another example of the school committee's attitude toward safeguarding the welfare of the pupils, and particularly the precautions taken against the spread of contagious diseases, was given in 1881. A house in which contagious diseases had spread was in proximity to a primary school building. The committee, considering it to be a nuisance and a menace to the pupils, allotted funds to buy a vacant lot nearby. The house was moved and the menace also, as well as allowing the school a better exposure to sunlight.

The well founded belief that the school furnished a medium for the spread of contagious diseases, especially diphtheria and scarlet fever, prompted the Board of Health, in 1887, to advise the school committee to provide for the frequent fumigation of the school houses throughout the city, in order to assist in preventing the spread of contagious diseases.

It was not uncommon for the Board of Health to issue the rule that "all the public school houses in the city be fumigated as often as once in each 2 weeks during the cold season; the work to be done by the janitor on Saturday burning 2 pounds of sulphur to each 1,000 cubic feet of space." [32]

In 1894 the first organized system of medical inspection of schools was established by the Board of Health, which had at that time full jurisdiction over school health problems. Eighty physicians were assigned to visit daily the assigned schools.[33]

Boston was again the leader in handling school health problems by establishing the position of director of school hygiene in 1907.[34] The physical and hygienic activities of the system were merged into one department. In 1912 women physicians were added to examine girls.[35] In 1915 the school physician and medical problems were detached from the Board of Health and assigned to this department under the school committee.[36] This department under the supervision of the school committee still continues to supervise the physical welfare of 140,000 pupils.

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Sanitary Survey of Beverage Establishments

With Reference to Sanitary Condition of Glassware*

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SINCE the repeal of prohibition, there have sprung into existence numerous road-houses, taverns, saloons, and miscellaneous establishments for the dispensing of alcoholic beverages. To an alarming extent, these establishments are inadequately equipped to clean and sterilize the glassware used. Furthermore, there is a deplorable lack of information as to methods of cleaning and sterilizing and a surprising array of hurriedly concocted compounds purporting to be disinfectants on the market.

To determine how effectively beverage glasses were being cleaned and sterilized, a survey was conducted in Lansing with the coöperation of the local department of health. Several months prior to this study, the City Council had passed an ordinance requiring the use of chlorine sterilizers and specifically stated that rinse waters must contain 200 p.p.m. of available chlorine. No attempt had been made to see whether these regulations were being obeyed. A preliminary survey showed that few places were even attempting proper care in the handling of glassware, and in most of these the chlorine sterilizers were being grossly misused. Few places in the entire city had satisfactory glassware. Many were not even provided with running water at the dispensing bar. Some were merely dipping the glasses in a pail of water which was changed at infrequent intervals. In a few, wash sinks were located in back-rooms inaccessible to the bar. Appearance of the bar and the wash sinks showed plainly that even rinsing the glasses in water was a rare occurrence.

EXPERIMENTAL

To determine the efficiency of the cleaning and sterilizing processes for glasses in the various establishments, it was thought necessary to examine: (1) the rims of clean and used glasses for the presence of bacteria; (2) the chlorine rinse water, the preliminary water rinse, and the cooling water for bacterial content; and (3) the chlorine rinse water for the presence of available chlorine. To obtain accurate bacterial counts of the chlorine rinse water, all samples were collected in sterile sample bottles to which had been added sodium thiosulphate as recommended by Mallmann and Cary.[1] Prior to sterilization each clean dry bottle received approximately 0.1 gm. of powdered sodium thiosulphate. The bottles were then sterilized in a hot air oven at a temperature not to exceed

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200° C. In collecting the samples, care was taken not to rinse the bottles in the solution to be collected, in order to avoid any loss of the sodium thiosulphate. All rinse and cooling waters not containing chlorine were collected in the usual water sample bottle. All samples were rushed to the laboratory and tested immediately after delivery.

Chlorine residuals were determined by the orthotolidine method, using a Wallace & Tiernan Hellige comparator. Readings were made at the end of 10 minutes for the inorganic chlorine compounds, and 30 minutes for the organic chlorine sterilizers.

The bacterial counts of the rims of the glasses was obtained by swabbing. The swabs were placed individually in test tubes containing 0.75 c.c. of sterile saline solution. Both clean and used glasses were tested by swabbing the rims on the inside and outside, to a depth of approximately ¾ inch. Swabs were washed off in 3 c.c. of sterile saline solution, and agar plates made using appropriate dilutions. The remainder of the swabs were smeared on blood agar plates. All plates were incubated at 37° C. for 48 hours when total counts were made. The blood agar plates were examined for the presence of streptococci.

To present the bacteriological picture found in the various establishments examined, typical reports of each significant type are reported.

In Report No. 1 is presented a fairly typical picture of a beer garden in which the glasses were rinsed in a tank of water supposedly containing a chlorine disinfectant, but which failed to show any chlorine at the time of examination. The proprietor conscientiously rinsed the glasses in the supposedly chlorine rinse water and then drained them inverted on a rack prior to use. The failure to sterilize the glasses properly was due to the preparation used. The clean glasses showed an average of 50,000 bacteria per rim while the chlorine rinse water contained 6,000 bacteria per c.c. The number of bacteria on the used glasses was far below that of the clean glasses. This would be expected as the bacteria are washed off into the beverage in the glass. Although the total number of bacteria on the used glasses was low as compared to the number on the clean ones, still 3 of the 5 used glasses examined showed streptococci. This beer garden, although the proprietor believed that he was sterilizing his glasses, typifies the condition wherein the glasses are rinsed in a tank or pail of water which is infrequently changed. Such cases are extremely common, particularly in cities having no ordinances requiring the use of sterilizing agents. In several instances the writers have observed glasses being refilled without cleaning of any nature. In such places it is a question which procedure is worse, washing in dirty water or refilling the glasses without rinsing.

REPORT NO. 1

NO CHLORINE USED IN THE RINSE WATER

	Bacterial Counts per Rim of Glass	
	Clean Glasses	*Used Glasses*
1	83,500	5
2	59,000	115
3	39,000	50
4	69,000	100
5	0	0
Average	50,100	54

Growth on Blood Agar Plate		
	Clean Glasses	*Used Glasses*
1.	Numerous colonies	Numerous colonies
2.	" "	" "
3.	" "	Numerous streptococci
4.	" "	" "
5.	sterile	" hemolytic streptococci

Bacterial content of rinse water at time of sampling—6,000 per c.c.

In Report No. 2 is presented a typical case of a popular (heavily patronized) beer garden where a large number of glasses are used. In this establishment, care was exercised by the bartender to maintain a residual chlorine content in

the rinse water. At the time of examination, 18 p.p.m. available chlorine were found. The sterilizer in use was an organic chlorine preparation. The glasses were rinsed for only a few seconds and immediately filled and returned to the patrons. An examination of 5 clean glasses revealed an average bacterial count of 17,000 per rim. The rinse water, although it contained a chlorine residual of 18 p.p.m. contained 36,800 bacteria per c.c. Although the amount of active chlorine should have been sufficient to destroy the bacteria introduced, the activity of the chlorine in this type of compound (organic chlorine) was too slow to destroy them as fast as they were added by the glasses. The result was an accumulation of bacteria that recontaminated the glasses. If the glasses had been inverted and allowed to drain for 5 to 10 minutes the chlorine on the glass

REPORT NO. 2

RINSE WATER CONTAINING 18 P.P.M. (ORGANIC) CHLORINE WITH FEW SECONDS' IMMERSION AND GLASSES USED IMMEDIATELY

	Bacterial Counts per Rim of Glass	
	Clean Glasses	*Used Glasses*
1	6,200	230
2	9,600	610
3	39,000	140
4	30,000	1,800
5	4,100	700
Average	17,000	696

Growth on Blood Agar

Clean Glasses	*Used Glasses*
1. Numerous colonies	Numerous colonies
2. " "	" "
3. " "	" "
4. " "	" streptococci
5. " "	" "

Bacterial content of chlorine rinse water—36,800 per c.c.

would have effected a considerable reduction in bacteria but when they were immediately filled, the beer acted as a dechlorinating agent and protected the bacteria against destruction. A number of places of this type were observed.

In Report No. 3 is presented another type commonly found. At this establishment the glasses were first rinsed in tap water, then in the chlorine solution, and after varying periods of draining were immersed in a tank of ice water to cool them prior to filling. At the time of inspection the chlorine tank contained only 7.5 p.p.m. available chlorine. The glasses examined had not been immersed in the cooling tank. Five glasses showed an average count of 16,200 bacteria per rim, though 2 of the 5 were sterile. The chlorine rinse water was sterile but no glasses were being rinsed at the time of inspection. The cooling water showed 22,800 bacteria per c.c. Even though the chlorine solution sterilized the glasses effectively, they were reinfected by immersion in the cooling water. The use of cooling tanks should be discouraged unless they have a constant flow of fresh water passing through them.

REPORT NO. 3

MINIMUM CHLORINE RESIDUAL 7.5 P.P.M. (ORGANIC) CHLORINE USED IN RINSE WATER

	Bacterial Counts per Rim of Glass	
	Clean Glasses	*Used Glasses*
1	520	0
2	0	10
3	14,500*	0
4	0	80
5	66,000*	10
Average	16,200	20

Growth on Blood Agar Plates

Clean Glasses	*Used Glasses*
1. 30 colonies	Streptococci (viridans)
2. 35 "	5 colonies
3. 10 "	Streptococci (viridans)
4. Sterile	" "
5. Numerous colonies	Numerous colonies

Bacterial content of chlorine rinse water—0
" " " final rinse water—22,800 per c.c.

* Glasses recontaminated by dirty final rinse water.

In a few instances (Reports 4 and 5) fairly satisfactory procedures were in use. Organic sterilizers were used and although the chlorine residuals were low, 4 to 7.5 p.p.m., the exposure was sufficiently long to lower the counts per glass rim to negligible numbers. The glasses were allowed to drain for 5 to 10

minutes after chlorination. Prior to chlorination they were thoroughly rinsed in either tap water in a tank or running tap water to remove any beer, which is necessary if efficient chlorination is to be expected. Obviously running tap water is the better of the two rinses. In one of the establishments the glasses were rinsed again in tap water prior to filling.

REPORT NO. 4

MINIMUM CHLORINE RESIDUAL 7.5 P.P.M. (ORGANIC) CHLORINE WITH GLASSES IMMERSED FOR FEW SECONDS BUT ALLOWED TO DRAIN FOR AT LEAST 10 MINUTES BEFORE USE

	Bacterial Count per Rim of Glass
	Clean Glasses
1	0
2	0
3	20
4	10
5	0
Average	6

Bacterial content of chlorine rinse water—0 per c.c.

REPORT NO. 5

MINIMUM CHLORINE RESIDUAL 4 P.P.M. (ORGANIC) CHLORINE WITH GLASSES IMMERSED AT LEAST 5 MINUTES

	Bacterial Count per Rim of Glass
	Clean Glasses
1	5
2	0
3	0
4	110
5	0
Average	23

Bacterial content of chlorine rinse water—0 per c.c.

The occurrence of high bacterial counts in rinse water containing chlorine was coincident with the use of organic chlorine preparations. The delayed action of organic chlorine compounds has been demonstrated by Mallmann and Cary [1] in the case of water disinfection, and in dairy equipment sterilization by Devereux and Mallmann.[2] In the latter work varying concentration of both types of chlorine sterilizers were passed through dairy equipment. The partially spent chlorine solutions were recovered and found to have a high residual chlorine content though considerably less than the fresh solution used. The writers were interested in knowing the comparative values of these solutions after the available chlorine had been partially destroyed. Five hundred c.c. samples were inoculated with suitable numbers of *Escherichia coli* and transplants were made to nutrient broth at the end of 15, 30, 45, 60, 90, 120, and 180 seconds. The broth was used as a dechlorinating agent, and subsequently all the tubes were plated to determine the number of surviving bacteria for each period of exposure. The data are presented in Table I which is a rearrangement of the data that appeared in Table III of that report. In the case of the inorganic chlorine compound sterilization was effected in 15 seconds with chlorine residuals of 40 and 81 p.p.m. and in 45 seconds with 17 p.p.m. available chlorine. On the other hand, the organic chlorine prepa-

TABLE I

COMPARISON OF ORGANIC AND INORGANIC CHLORINE AS TO SPEED OF DISINFECTION

Test Organism—24 Hr. Culture of *Escherichia Coli*

Sterilizer	*Inorganic Chlorine*			*Organic Chlorine*		
Concentration p.p.m.	*81*	*40*	*17*	*76*	*60*	*38*
Seconds Exposure	*Bacterial Count per c.c.*					
15	0	0	3,100	55,000	77,300	173,000
30	0	0	2,300	29,000	64,700	170,000
45	0	0	0	11,500	52,000	112,000
60	0	0	0	7,500	39,000	105,000
90	0	0	0	6,000	28,000	76,600
120	0	0	0	617	34,200	86,000
180	0	0	0	0	6,700	51,500
Control	750,000	205,000	141,000	2,324,000	156,300	302,000

ration was comparatively extremely low. It took 180 seconds to sterilize with 76 p.p.m. and no sterilization was effected with either 36 or 60 p.p.m. in the same time. The organic chlorine sterilizer used in these experiments was the same compound encountered in the beer gardens. These data show that the delayed activity of organic sterilizers is the same in partially spent solution as in freshly prepared solutions. The delayed activity does not necessarily condemn these compounds because they have certain properties that are quite desirable, but it means that longer exposures must be used to obtain the same results that can be obtained with the inorganic chlorine sterilizers.

To obtain some idea of the time necessary for beverage glass disinfection with both organic and inorganic chlorine sterilizers, extreme pollution conditions were set up in the laboratory. Typical test organisms representing both Gram-positive and Gram-negative organisms were used. As *Staphylococcus aureus* has a resistance equal to or greater than most of the Gram-positive pathogenic cocci, this organism was selected. *Escherichia-coli* was selected as a typical representative of the Gram-negative organisms. Suspensions of 24 hour cultures were made using the growth from 3 to 4 well covered agar slants to 100 c.c. sterile salt solution. Clean slides were dipped into these suspensions, immersing one-half of each slide, draining and drying in air.

Seven slides were prepared for each experiment with each organism. Two slides (Nos. 3 and 4) were immersed without agitation in 100 c.c. of a chlorine sterilizer for 20 seconds when they were immediately transferred to a deep culture dish containing 25 c.c. of sterile sodium thiosulphate (approx. 0.5 per cent) water. The slide was agitated for 10 seconds rapidly to free the slide of any viable organisms that remained after chlorination. Subsequently the final rinse water was plated to determine the number of bacteria

TABLE II

THE EFFICIENCY OF AN INORGANIC AND ORGANIC STERILIZER ON THE DESTRUCTION OF ORGANISMS DRIED ON GLASS SLIDES

Sterilizer	HTH-15	HTH-15	HTH-15	HTH-15	Sterichlor	Sterichlor	Sterichlor	Sterichlor
Concentration p.p.m.	190	175	175	175	150	150	175	200
Test organism	*Esch. coli*	*Esch. coli*	*Staph. aureus*	*Staph. aureus*	*Esch. coli*	*Esch. coli*	*Staph. aureus*	*Staph. aureus*
	plate ct. per slide	plate ct. per slide	plate ct. per slide	plate ct. per slide	plate ct. per slide	plate ct. per slide	plate ct. per slide	plate ct. per slide
Slide No. 1*	22,500	95,000	2,950,000	500,000	200,000	750,000	1,525,000	875,000
No. 2	75,000	125,000	1,550,000	1,500,000	467,000	480,000	1,525,000	875,000
No. 3	0	0	5,000	0	3,050,000	16,750	515,000	92,000
No. 4	250	0	67,500	750	16,000	21,500	780,000	102,000
No. 5	250	0	11,250	0	250	0	315,000	8,000
No. 6	0	0	1,000	0	0	0	290,000	5,500
No. 7	3,000,000	1,700,000	2,700,000	1,400,000	300,000	900,000	2,200,000	3,800,000

* Slide No. 1—Count represents number of viable organisms removed after 20 sec. immersion in saline
Slide No. 2—Count represents number of viable organisms removed after 60 sec. immersion in saline
Slide No. 3—Count represents number of viable organisms removed after 20 sec. exposure to disinfectant
Slide No. 4—Count represents number of viable organisms removed after 20 sec. exposure to disinfectant
Slide No. 5—Count represents number of viable organisms removed after 60 sec. exposure to disinfectant
Slide No. 6—Count represents number of viable organisms removed after 60 sec. exposure to disinfectant
Slide No. 7—Count represents number of viable organisms originally dried on the slides

surviving. The sodium thiosulphate in the water neutralized any chlorine that might have been carried over on the slide and prevented further bacterial action. The minimum of 20 seconds was selected because in previous trials it was found that sterility was not obtained with inorganic sterilizers in less time. Slides Nos. 5 and 6 were treated in a similar manner except that exposure in the chlorine solution was for 60 seconds. To check the number of bacteria actually killed by the chlorine, 3 control slides (1, 2 and 7) were tested. Slide No. 1 was immersed in 100 c.c. of sterile water for 20 seconds to simulate the washing that resulted in immersing the slide in the chlorine water bath; then transferred to 25 c.c. sterile water; agitated rapidly for 10 seconds; and agar plates made from this rinse to determine the number of bacteria present. Slide No. 2 was treated in a similar manner except that it was held in the first water bath for 60 seconds. Slide No. 7 was agitated rapidly in 100 c.c. sterile water to remove all of the viable organisms that had been removed in the experiments in the 100 c.c. of chlorine sterilizer and subsequently in the 25 c.c. of water used for the final rinsing of the slide. The chlorine sterilizer was used in concentrations of approximately 200 p.p.m. available chlorine.

Several trials were conducted with both organisms using an inorganic and organic chlorine compound. The results of representative experiments are given in Table II, and show that even with 500,000 to 1,000,000 *Staphylococcus aureus* on an area of 3 sq. in., an inorganic chlorine preparation can effect complete sterilization in 60 seconds. If this large number of *Staphylococcus aureus* can be killed in this time, surely streptococci and other pathogens that are more susceptible to disinfectants and which occur in far smaller numbers on the rims of used glasses can be destroyed. *Escherichia coli* is much more susceptible than *Staphylococcus aureus*, which is to be expected from previous observations on the comparative resistance of these two organisms. Although the organic chlorine compound was able to kill *Escherichia coli* in 60 seconds it failed in the case of *Staphylococcus aureus*. This means that a longer exposure must be used where this compound is used. It would seem on the basis of these data that, in routine sterilization of beverage glasses, a period of exposure of 5 minutes should be required.

DISCUSSION

The fact that many of the establishments dispensing beverages in glasses were not provided with adequate facilities for the effective cleansing and sterilizing of their glassware, and that in many places having adequate equipment and materials, these were not properly applied, demonstrates the need of the development of proper methods of treatment and an educational and regulatory program whereby proper cleansing and sterilization can be assured. It seems needless to point out the dangers of disease transmission by the use of improperly sterilized glasses, since all sanitarians are cognizant of them.

To determine how effective an educational and regulatory program could be made, a plan was formulated. First, on the basis of the experimental work presented the following regulations for the care of beverage glasses were prepared.

1. *Provide rinse to remove material from glass.*—In many places where chlorine rinses were in use, the bartenders were rinsing the beer laden glasses directly in the chlorine water. The organic matter introduced from the beer soon destroyed all available chlorine and the rinse, instead of acting as a sterilizing agent, functioned as an

inoculating bath to give each glass rinsed a composite contamination. In all cases, the glasses should be cleaned before they are immersed in the chlorine water. The amount of cleaning will depend largely on the physical appearance of the used glasses. In places where only beer is dispensed, this cleaning may consist in merely rinsing the glasses in running tap water. The use of still water unless changed frequently should be discouraged.

2. *Provide a tank of chlorine rinse water containing when freshly prepared 200 p.p.m. chlorine and at no time less than 100 p.p.m. This rinse must be changed at least once a day, and oftener if the volume of glassware disinfected reduces the chlorine below the minimum limit.*—The writers have previously observed that any amount of chlorine in excess of the chlorine demand of the water is practically as effective as large excesses, but solutions containing minimum amounts of chlorine have little or no reserve powers. Where a rinse solution is used repeatedly, as under the conditions cited, the reserve chlorine content of the solution when freshly prepared should be as high as the hands can stand without injury. Two hundred p.p.m. is not injurious. A minimum of 100 p.p.m. was established not because concentrations below this figure were considered ineffective, but because it gave the inspector a better opportunity to force the proprietors into a more strict adherence to proper sterilization.

3. *Leave glasses immersed in the chlorine rinse for at least 5 minutes, or immerse and then allow glasses to drain for 5 minutes inverted on a rack without rinsing off the chlorine water.*—This period of exposure gives at least 2 to 3 minutes' safety factor even with organic chlorine preparations and assures sterile glasses. Possibly an exposure of 2 to 3 minutes would be ample, but in the hands of the average individual the longer period is advisable.

4. *Glasses after draining for at least 5 minutes or being immersed 5 minutes in the chlorine rinse may be placed in running tap water to cool, preparatory to filling with beer or other beverages.*—Preferably glasses should be filled without rinsing off the residual chlorine, but in the case of heavy mugs and glasses it is necessary to cool the glass prior to filling. The use of a tank filled with ice is not recommended, due to the danger of bacteria accumulating and recontaminating the glasses.

5. *All glass disinfectants must receive the endorsement of your department of health before they can be used. Failure to comply will be considered a violation of this code.*—This provision prevents high pressure sales of spurious products such as are flooding the market at present. Since this code was adopted in Lansing a number of such products have been tested and rejected as unsatisfactory.

6. *All glass disinfectants must be of such a nature that the sanitary inspector can by means of a simple test determine the amount of said disinfectant in the rinse water.*—A check on the rinse water is the only convenient test that can be made to insure proper sterilization. There are compounds on the market that will sterilize, but there is no convenient procedure for checking their presence quantitatively, so the inspector must rely on the statement of the proprietors that a disinfectant is being used, and this is highly unsatisfactory. An orthotolidine test for chlorine is easily made and the results furnish dependable evidence, particularly if prosecution is necessary.

At the time this code was put in operation the proprietors of all establishments were requested to attend a meeting for instructions. An attempt was made to impress them with the need of effective sterilization and to

teach them proper methods. It was hoped that an educational program would make them appreciate the fact that the department of health was attempting to assist them, rather than to force the observation of regulations that may have seemed unjustified.

The result of this program has been exceedingly gratifying. After 2 months without any extensive prosecutions, only one establishment was found that was not carrying out the regulations. The proprietor was an uneducated man who had not attended the school of instruction.

SUMMARY

Reports are given showing the common methods used by taverns for cleaning and sterilizing glassware, few being satisfactory. Excessive numbers of bacteria were found on most of the glassware.

The ability of chlorine sterilizers to kill these organisms was demonstrated. The sterilizers were applied at room temperature in order to duplicate practical conditions, in which the inorganic compounds were more efficient.

Recommendations are given for the proper cleansing and sterilizing of glassware for establishments dispensing beverages.

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Scarlet Fever

". . . From the above considerations I would suggest that:

1. The term "scarlet fever" be abolished. I have endeavored to show that scarlet fever is an infection by the hemolytic streptococcus not differing from other hemolytic streptoccal infections in any matter of practical importance. But in practice it is found that the retention of the term "scarlet" concentrates attention on what may be the most obvious, but is in reality the less important feature of the disease, namely the rash. I would suggest the term "Hemolytic fevers" be adopted to cover the whole group.

2. It follows that notification should be Hemolytic Fever, not Scarlet Fever. To notify only the cases showing a rash like the textbook description of a scarlet fever rash, is to notify only a part of the epidemic, and on the whole, experience in Chelmsford suggests that it is the least important part.

3. The use of the isolation hospitals should be restricted to two classes of cases only.

(a) Cases suffering from hemolytic streptococcus infection who are so seriously ill, or in such poor home surroundings, as to make hospital necessary for *treatment*, quite apart from isolation.

(b) Cases suffering from hemolytic streptococcus who, by reason of their home conditions, require to be isolated as being a danger to the community. Such cases as dairymen, people living in hotels, lodging-houses, etc., would come under this category."—Sleigh, J. C., M.B., Ch.B., D.P.H. (Medical Officer of Health, Chelmsford), Scarlet Fever. *J. Roy. San. Inst.*, June, 1935, p. 662.

Rocky Mountain Spotted Fever in New York State Outside of New York City

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IN view of the scarcity in the literature of reports of Rocky Mountain spotted fever in the eastern section of the United States, it seemed of interest to submit a brief summary of 10 cases presenting clinical evidence of Rocky Mountain spotted fever which have occurred in New York State (outside of New York City) from 1926 to 1934, and to record the results of the agglutination tests performed with *B. proteus* X 19 with blood specimens from the patients.

The 10 patients, 2 of whom were members of the same family, were residents of rural districts in one county on Long Island. The patient referred to in the report of Gilbert and Coleman [1] also lived in the same county. Four of the 10 patients were children whose ages ranged from 2½ to 6 years, and 6 were adults whose ages were from 20 to 52 years. There was an equal distribution of the cases between the sexes. All of the patients became ill either in the late spring or in the summer. Nine of the 10 persons had been in contact with ticks, 5 of whom reported that they had been bitten only a short time before the onset of illness. The remaining patient was a farm laborer whose surroundings and living conditions were fairly good and did not suggest rat infestation. However, he might easily have come in contact with ticks while working in the fields.

The clinical symptoms recorded on the histories accompanying blood specimens received from the patients were such as have been described by Rumreich [2] for Rocky Mountain spotted fever. The symptoms may be summarized as follows: The onset was sudden. The patients complained of severe headache, marked prostration, loss of appetite, constipation, and fever. The rash appeared early in the disease, first on the extremities, later becoming generalized. This eruption in the initial stages was macular and erythematous in appearance but upon extension became papular and petechial, and in some instances there was a coalescence of the petechiae forming larger hemorrhagic areas which persisted for several weeks. The peak of the temperature in the majority of the cases was 104° F., and in a few it reached 105° F. Nervousness, restlessness, and lethargy were common, and delirium was not unusual. Several of the cases showed rigidity of the neck and back and a few showed paralysis of the extremities. There was slight impairment of sight and hearing in a few instances. The disease was of several weeks' duration and the mortality rate was 30 per cent.

The strain of *B. proteus* X 19 (No. 211) employed in the agglutination test was obtained from Dr. Mooser of Mexico City. An alcohol-treated suspension [3] of the microörganisms was em-

TABLE I

Results of Agglutination Tests with *B. Proteus* x 19 and Sera from Patients with Rocky Mountain Spotted Fever

History	Day of illness when blood was collected	Unheated Serum									Serum heated at 56°C.—½ hr.								Serum heated at 60°C.—½ hr.					Serum heated at 65°C.—½ hr.				
		10	20	40	80	160	320	640	1280	2560	10	20	40	80	160	320	640	1280	10	20	40	80	160	10	20	40	80	160
1. Male 52 yrs. Onset 5/14/26 Recovered	17 24	4+ 4+	4+ 4+	4+ 4+	4+ 4+	4+ 3+	3+ 2+	— —	— —	— —	3+ —	3+ —	3+ —	± —	— —	— —	— —	— —	* —	— —	— —	— —	— —					· —
2. Male 2½ yrs. Onset 8/11/32 Recovered	18	4+	4+	4+	4+	4+	3+	3+	3+	+																		
3. Male 31 yrs. Onset 8/13/32 Died	6	4+	4+	4+	4+	4+	4+	4+	3+	2+																		
4. Female 6 yrs. Onset 8/13/33 Recovered	10 28	4+ 4+	4+ 4+	4+ 4+	4+ 3+	4+ +	4+ —	2+ —	— —	— —	4+	4+	4+	4+	4+	3+	3+	+	—	—	—	—	—	—	—	—	—	—
5. Female 20 yrs. Onset 8/18/33 Recovered	6 12 21	+ 4+ 4+	+ 4+ 4+	± 4+ 4+	— 4+ 3+	— 4+ 3+	— 4+ 2+	— 3+ +	— 2+ —	— — —	4+	4+	4+	3+	3+	3+	+	—	—	—	—	—	—	—	—	—	—	—
6. Female 4½ yrs. Onset 5/26/33 Recovered	14	4+	4+	4+	3+	3+	2+	±	—	—	4+	4+	4+	3+	3+	±	—	—	4+	4+	3+	2+	—	—	—	—	—	—
7. Female 43 yrs. Onset 6/5/34 Recovered	10 28	4+ 4+	4+ 4+	4+ 4+	4+ 4+	3+ 4+	3+ 4+	2+ 4+	— 3+	— 2+	4+	4+	4+	4+	4+	3+	2+	—	—	—	—	—	—	—	—	—	—	—
8. Male 43 yrs. Onset 8/3/34 Recovered	12 14 15	4+ 4+ 4+	4+ 4+ 4+	4+ 4+ 4+	4+ 3+ 3+	3+ 2+ 2+	— — —	— — —	— — —	— — —		—	—	—	—	—	—	—										
9. Female 33 yrs. Onset 7/25/34 Died	3 7	4+ 4+	3+ 3+	2+ —	— —	— —	— —	— —	— —	— —																		
10. Male 6 yrs. Onset 7/24/34 Died	5 10	— 4+	— 4+	— 4+	— 3+	— ±	— —	— —	— —	— —	4+	4+	4+	3+	±	—	—	—	4+	4+	3+	+	—	—	—	—	—	—

* Inactivated at 58°C.

4+ = Clear supernatant fluid—complete agglutination
3+ = Clear supernatant fluid—definite agglutination
2+ = Cloudy or slightly cloudy supernatant fluid—definite agglutination
+ = Cloudy supernatant fluid—agglutination discernible to the unaided eye
± = Questionable reaction
— = Uniformly turbid suspension—no agglutination

ployed, the opacity of which was equal to that of the barium-sulphate standard No. 3.[4] Such a suspension was employed in every case but one in which a living culture of *B. proteus* X 19 strain No. 211 was used. From one to three blood specimens from each patient were examined, and wherever possible the agglutination test was also carried out with the serum heated for ½ hr. at 56, 60, and 65° C. The tests were read after an incubation period of 2 hours at 45° C., followed by from 16 to 18 hours in the refrigerator. The results of the tests are given in Table I.

SUMMARY AND CONCLUSION

A marked agglutination reaction was demonstrated with *B. proteus* X 19 in the blood sera from 8 of the 10 patients, and partial agglutination was obtained with two of the sera. The latter two specimens were collected very early in the disease as the patients died on the 10th and 11th day, respectively, of their illness. Although no conclusions can be drawn from the few cases studied, the importance of obtaining a series of blood specimens from suspected Rocky Mountain spotted fever cases is indicated. Davis, Parker, and Walker [5] have recently suggested that three samples of blood should be taken, the first one as soon as spotted fever is suspected, the second during the period from the 10th day to cessation of fever, and the third at about the end of the first week of convalescence.

The epidemiological and clinical data in this series of cases suggested that the disease was Rocky mountain spotted fever. In 9 of the 10 cases there was either clinical evidence of tick bite or a definite history of contact with ticks before the onset of illness. None of the cases could be associated with flea bites. The distribution and character of the rash in the majority of the cases were strikingly similar, appearing early on the extremities, later becoming generalized. The cases occurred from 1926 to 1934, in the late spring and summer of successive years for the most part, and only in rural localities of the same county; in one instance two members of the same family were infected. There was a mortality rate of 30 per cent in this group of cases.

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4 = Cloudy or slightly cloudy supernatant fluid—definite agglutination
3 = Uniformly turbid suspension—no agglutination

Relative Value of Heated Toxin and Toxoid as Controls in the Schick Test

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BECAUSE of the tendency of many adults and certain older children to show nonspecific pseudo reactions with the Schick test, it has been the common practice to use on such persons an additional injection of the test-toxin heated to 75° C. for 5 minutes as a control. This heating destroys the thermo-labile toxin, and any reaction in the control test is considered as a skin sensitivity to substances in the test material other than diphtheria toxin. Persons who react to the control test are read as "negative pseudo" or "combined positive," depending on the comparison of the degree of the reaction produced by the test and the control.

It was soon discovered that "combined positive" reactors, or those who gave positive Schick tests and some reaction also in the control, often tended to show severe local disability and also general toxic reaction when later injections of toxin-antitoxin or toxoid were given. This led Moloney and Fraser[1] to suggest that such susceptibility to the immunizing injections might be more readily determined by using a test of diluted toxoid (1:20) as control, since such a test would serve also as a control for the Schick test.

Since the diluted toxoid obviously contains much more of the nonspecific skin reactive substance than the heated toxin, it is to be expected that it would reveal more readily those persons sensitive to later immunizing antigen injections. On the other hand, while the pseudo reaction reaches its maximum development in 48 hours and has usually faded by the 4th day when the Schick test is read, a very marked pseudo reaction may persist as long as 4 days. Therefore, the toxoid skin reaction in certain instances might be expected to be so intense as to interfere with the interpretation of the Schick test, that is, it might be difficult to distinguish a negative-pseudo reaction from a combined positive, even as late as the 4th day.

This paper gives the results of a series of tests with Schick toxin, heated toxin control, and toxoid 1:20, in an attempt to determine:

1. Whether the diluted toxoid control contains the nonspecific skin-reactive substance in a concentration so high that the resulting pseudo reaction will confuse the reading of the Schick test.

2. Whether positive tests with both the heated toxin and diluted toxoid indicate that the individual will have a general reaction after injection of toxoid for active immunization.

METHODS

Intradermal injections of Schick test toxin, heated toxin control, and diluted toxoid control were carried out on each

TABLE I

COMPARISON OF REACTIONS WITH HEATED TOXIN AND TOXOID SCHICK TEST CONTROLS—48 HOURS

	Number of Cases	Heated Toxin Control ++	+	±	—	Diluted Toxoid Control ++	+	±	—
Schick Positive	20	1	1	3	15	14	3	3	0
Schick Negative	40	4	3	1	32	26	11	3	0
Totals	60	5	4	4	47	40	14	6	0

of 161 unselected white and colored subjects of both sexes whose ages ranged from 8 to 65 years. The majority of subjects were young to middle-aged white adults. The test group included patients from hospital wards, as well as nurses and medical students. No attempt has been made to differentiate results on the basis of age, sex, or color. The material used was furnished by Ely Lilly and Co., Indianapolis.

Since pseudo reactions reach their height on the 2nd day, all readings were made on the 2nd as well as the 4th and 7th days. Those reactions which measured 20 mm. or more in diameter were called "++"; those between 10 mm. and 20 mm., "+"; while those that showed an area of reaction of more than 5 mm. but less than 10 mm. were called "±." For practical purposes in tabulating results, all ± reactions are considered as negative.

Of the 161 persons tested, 60 had some reaction in one or both controls, and this group formed the basis of the study. One-third of these were read as "combined positive" and the remainder proved to be "negative pseudo" reactions. The other tests were frank positive (35) or negative (66).

RESULTS

Second day readings—In Table I are summarized the results of the control test readings at the end of 48 hours, and the differences in size and number of reactions produced by the heated toxin and diluted toxoid. It will be seen that with the toxoid control a total of 54, or 90 per cent of the subjects, showed reactions which were more than 10 mm. in size (++ or +) whereas only 9, or 15 per cent, of them showed positive readings with the heated toxin control. Similarly, 40, or two-thirds of the toxoid reactions were larger than 20 mm., while only one-twelfth of the heated toxin tests were of this size.

Fourth day readings—In Table II

TABLE II

COMPARISON OF REACTIONS WITH HEATED TOXIN AND TOXOID SCHICK TEST CONTROLS—4 DAYS

	Number of Cases	Heated Toxin Control ++	+	±	—	Diluted Toxoid Control ++	+	±	—
Schick Positive									
Reading ++	8	0	0	1	7	4	0	0	4
Reading +	12	0	0	1	11	5	3	2	2
Totals	20	0	0	2	18	9	3	2	6
Schick Negative	40	0	4	0	36	9	12	2	17

are shown the results of the same control tests at the end of 4 days—the usual time for reading Schick tests. Here the differences between the reactions of the heated toxin and the toxoid are quite apparent.

It will be seen that whereas a positive reaction is still present with the toxoid control in 33, or 55 per cent, of the 60 cases, there remains a positive reading with the heated toxin in only 4, or 7 per cent, of the subjects. Readings obtained on this day emphasize the importance of the use of a control with the Schick test as well as the advantage of the heated toxin for use as this control. Of the 40 Schick negative readings obtained on the 4th day, 4, or 10 per cent, would have been considered positive if heated toxin had not been used as a control, since the size of the pseudo reaction was sufficiently large to be misleading. Further analysis demonstrates that 12 of the Schick tests which are considered positive with reference to the heated toxin control would be read negative if only the diluted toxoid control were used. Thus the toxoid control would have caused an erroneous negative reading in 12, or 60 per cent, of the 20 positive Schick tests.

Table III gives the detailed reactions in 4 selected cases and further emphasizes the difference in Schick test readings with reference to the 2 controls since all of these errors of reading the test are apparent.

Seventh day readings—Since Schick tests remain positive for some time and the pseudo reactions fade more quickly, it has been stated that any confusion caused by pseudo reactors would be obviated if the final Schick test readings were delayed until the 7th day.

In Table IV are shown these 7th day readings. It is apparent that the reactions of the diluted toxoid control may be present to a sufficient extent on the 7th day to cause an erroneous reading. This is true in 12, or 60 per cent, of the 20 positive tests. The use of the heated toxin as a control eliminated this error in interpretation of the test.

TABLE III

FOUR EXAMPLES ILLUSTRATING POSSIBLE ERROR IN READING SCHICK TEST USING TOXOID AS CONTROL

	Size of Skin Reaction in mm.				
Day:	*2nd*	*4th*	*7th*	*Schick Test Reading Using Only Heated Toxin Control*	*Schick Test Reading Using Only Diluted Toxoid Control*
Case 1					
Schick	12x10	12x10	15x10		
Heated Toxin Control	6x5	8x5	7x7	Weak Positive	
Diluted Toxoid	20x20	30x20	12x12		Negative Pseudo
Case 2					
Schick	25x20	25x20	25x20		
Heated Toxin Control	—	—	—	Positive	
Dil. Toxoid Control	40x32	30x30	25x20		Negative Pseudo
Case 3					
Schick	18x25	20x25	15x15		
Heated Toxin Control	—	—	—	Positive	
Dil. Toxoid Control	20x40	20x20	10x15		Negative Pseudo
Case 4					
Schick	15x15	10x10	10x10		
Heated Toxin Control	8x8	—	—	Positive	
Dil. Toxoid Control	30x45	25x25	20x20		Negative Pseudo

TABLE IV

COMPARISON OF REACTIONS WITH HEATED TOXIN AND TOXOID SCHICK TEST CONTROLS—7TH DAY

	Number of Cases	Reactions With Heated Toxin Control				Reactions With Diluted Toxoid Control			
		++	+	±	—	++	+	±	—
Schick Positive									
Reading ++	8	0	0	1	7	4	0	0	4
Reading +	12	0	0	1	11	5	3	2	2
Totals	20	0	0	2	18	9	3	2	6
Schick Negative	40	0	4	0	36	9	12	2	17

Reactions following toxoid injections—In the group of adults with positive Schick tests, 24 were given an injection of 0.5 c.c. of alum precipitated toxoid subcutaneously. Twenty of these had shown no skin reaction in 48 hours to either the heated toxin or the toxoid control. None of these had any general toxic reaction after the injection although many had a local redness and soreness of varying degree at the point of injection. The other 4 had all shown positive tests in the toxoid control of the 2nd day, and all developed a severe generalized reaction following the toxoid injection. This consisted of intense headache, fever, chills, and malaise lasting 2 to 5 days. Only 1 of the 4 (Case 1, Table III) had had any skin reaction to the heated toxin and this was less than 10 mm. in diameter, but the subject showed the most severe generalized reaction, although only 0.1 c.c. of the alum precipitated toxoid was given. The other 3 of whom Case 3, Table III is one, gave similar control skin tests, positive only with the diluted toxoid. One of them, in addition to the severe general reaction, developed a large sterile abscess at the site of injection. From this small group it would appear that there is insufficient "pseudo-reaction-substance" in the heated Schick toxin control to indicate susceptibility to general reaction from toxoid injections; and also that the injection of alum precipitated toxoid is prone to produce very severe reactions in those persons who give positive skin tests to diluted toxoid.

DISCUSSION

Although the number of subjects studied is comparatively small, the relative value of the two types of Schick test controls seems clearly indicated. Heated toxin, preferably of the same lot used in the Schick test, is a proper control and apparently allows a correct interpretation of pseudo reactions in the Schick test. Diluted toxoid (1:20) on the other hand, is not a true control, and its use in certain instances obscures the reading of the test, since some Schick-positive persons will be interpreted as negative-pseudo reactors. However, the diluted toxoid skin test is superior to the heated toxin control as an indication of the subject's susceptibility or sensitivity to reactions following toxoid injections.

Because pseudo reactions are rare in infants and young children, and since at these ages severe reactions following immunizing injections are almost unknown, it has become customary to omit controls when Schick-testing them. With older children and adults pseudo reactions are much more common, and apparently the skin sensitivity pro-

ducing them is closely associated with the production of severe reactions to immunizing antigen injections.

When toxin-antitoxin was the commonly used antigen, any reactions following injections were usually mild apparently because of the small amount of reacting material present. When toxoid replaced toxin-antitoxin as immunizing antigen, the larger quantity of reacting material produced increasing numbers of severe reactions in susceptible persons. In the more recently used alum precipitated toxoid antigens, apparently the reaction-producing substance is precipitated as well as the toxoid, and their injection may produce severe reactions which are often incapacitating for several days. The indiscriminate use of such injections in older children and adults, therefore, is a matter of some importance, and if the use of a suitable skin test will warn of the danger of such severe reactions, such controls are well worth while. It is not yet certain just what measures are advisable to immunize such susceptible persons, whether toxin-antitoxin injections or small doses of unprecipitated toxoid. It is possible that some method of removing some or most of the offending material may eventually be discovered.

While the value of controls in older children and adults would therefore seem unquestioned, the use of two controls—one of heated toxin as a control for the test, and another for determining sensitivity to toxoid reactions—would be considered impractical by many. It would seem that both these controls might be combined in one test by using a Schick test solution to which a small amount of toxoid (*e.g.*, 1:20) had been added to increase the amount of pseudo reaction substance present, and to use the same material heated to 75° C. for 5 minutes as a control. With such material, readings at 48 hours would indicate the pseudo reactors who might be expected to develop severe symptoms after toxoid injections and readings on the 4th to 7th day would determine which of these were "negative-pseudo" and which were "combined positive."

CONCLUSIONS

In performing Schick tests, a proper interpretation is possible only when a heated preparation of the same material employed for the test is used as a control. The use of diluted toxoid as a control interferes with the reading of the test by producing more marked pseudo reactions, but is therefore of great value in indicating those persons susceptible to toxic symptoms following immunizing injections of antigen. It is suggested that a more satisfactory Schick test material for older children and adults might consist of a mixture of toxin and toxoid.

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NOTE: This work was done under the supervision of Dr. Jean V. Cooke, to whom we are greatly indebted for advice and criticism.

Survival and Rate of Death of Intestinal Bacteria in Sea Water*

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THE classic reports of Jordan and his coworkers [1] in 1904 mark the real beginning of systematic studies of typhoid longevity under various natural conditions. Investigations confirming and extending those observations have been in progress more or less continuously from that time to the present date. The majority of the studies have been concerned with the length of the survival of the typhoid organisms in fresh waters of varying degrees of purity. With the development of devastating epidemics of oyster-borne typhoid in 1924–1925, considerable attention has been directed to the longevity of the intestinal group in salt waters and oyster liquors. Bulstrode and Klein [2] in 1896, Stiles [3] 1912, and Round [4] 1914, were among the early investigators who concerned themselves with the rôle of oysters in the transmission of water-borne disease, while Tonney and White [5] 1925, Jordan [6] 1925, Kinyoun [7] 1925, and Krumwiede and Park [8] 1926, present the more modern studies.

Of additional importance in directing attention to the viability of the intestinal pathogens in sea water has been the rapid tendency toward the development of beaches for recreational purposes. The problem becomes, then, of acute interest to those municipalities discharging raw or partially treated wastes into oceans, bays and estuaries.

In spite of all the investigations, however, there remains a lack of definite quantitative data concerning the behavior of this group in polluted salt waters. de Giaxa [9] 1889 seems to have been the first to attack the problem, and others have followed as cited. Approximations of survival time have been indicated, but technical difficulties have interfered with gaining more exact expressions. The possibilities of error in attempting to select a few typhoid colonies from among the many types developed from highly polluted waters even with the most selective media available and the best of technics are obvious.

The report by Wilson and Blair [10] 1927 of a highly selective medium for typhoid isolation offered a possibility of adding to the information at hand upon typhoid survival and rates of death.

After some experimental work the technic of preparing and using the Wilson-Blair bismuth medium was standardized to the point where comparable colony counts of a Rawlings strain of *Eberthella typhosa* were obtained on this medium and routine nutrient agar. From a plate prepared from fresh stools of a typhoid patient 50 colonies selected as typhoid were

* Extract of thesis presented to Committee on Graduate Study in partial fulfillment for the Degree of Engineering.

confirmed on Russell's medium and 20 per cent of these selected at random were confirmed serologically. The data indicate sufficient reliability and selectivity for application of the medium to the study of rates of death.

METHODS

It was proposed to follow the procedure of Jordan [1] of immersing fluid cultures of the organism in cells or sacks of membranes permeable to water and at least some of the dissolved and colloidal substances that might be present in the waters under investigation. The construction of the cells is indicated in Figure I. The cells, essentially sideless brass flasks, were made of brass heavily coated with paraffine to prevent any oligodynamic phenomena. A brass plate, paraffine coated, and the permeable membrane covered the back and front of cells, respectively, and were held in position by the clamps indicated in the drawing. Rubber gaskets effectively prevented any leakage in or out of the cells.

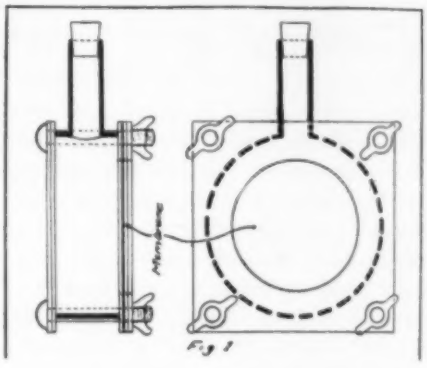
The membranes were prepared by soaking filter paper in a solution of 2.5 per cent pyroxylin in glacial acetic acid. Tests showed the *Escherichia coli* was always restrained, but that after prolonged immersion some cultures of *Serratia marcescens* might to a slight extent come through; from which it was indicated that fair sized particles in polluted waters could pass into the cell. The organisms studied were a Rawlings strain of *Eberthella typhosa* and a laboratory strain of *Escherichia coli*.

The field of operation was San Francisco Bay at Palo Alto, California, into which the untreated sewage, chiefly domestic in type, of that city was discharged. Naturally the constituents of the water are subject to considerable variation. Table I shows the average of a number of analyses at various stages of the tide.

TABLE I

AVERAGES OF SEA WATER ANALYSES IN PER CENT

	Stage of Tide		
	Low	*Mean*	*High*
Total non-filterable solids	2.29	2.88	2.95
Volatile matter	0.46	0.72	0.58
Fixed solids	1.83	2.16	2.37
Settleable solids c.c./liter	1.00	0.25	1.85



The cells were immersed in duplicate in the waters of the bay. The temperature of the bay waters during these experiments did not deviate greatly from 10° C. In one cell the suspending medium was fresh unfiltered water from the bay, in the other the same water sterilized by passage through an L 3 Chamberland candle.

At appropriate intervals the flasks were taken up, samples were withdrawn, and within 15 minutes were in the laboratory for plating.

A number of such experiments were performed. The general picture obtained was the same in all cases. For economy of space three typical sets of data only are included in Table II.

A number of similar experiments substituting *Escherichia coli* for *typhi* were carried out and one set of those data are presented in Table III.

The data obtained in these studies have been as consistent as could be expected in a situation where environment is not under control.

In all experiments the death rates

TABLE II

SURVIVAL OF TYPHOID ORGANISMS SUSPENDED IN FILTERED AND UNFILTERED SEA WATER IN CELLS IMMERSED IN SEA WATER

Days	*Viable Organisms per c.c.*		*Per Cent of Initial Number*	
	Filtered Sea Water	*Unfiltered Sea Water*	*Filtered*	*Unfiltered*
0	320,000,000	310,000,000	100.0	100.0
0.3	290,000,000	270,000,000	90.7	84.5
1	89,000,000	16,000,000	27.9	5.0
2	55,000,000	9,000,000	17.2	3.0
3	6,100,000	500,000	1.9	0.16
4	2,010,000	160,000	0.63	0.05
6	720,000	34,000	0.23	0.01
9	44,000	8,900	0.01	+
12	135	2	+	+
14	65	0	+	0
16	0	0	0	0
	Experiment 2			
0	300,000,000	300,000,000	100.0	100.00
0.3	273,000,000	267,700,000	91.1	89.2
1	84,000,000	23,400,000	28.1	7.8
2	50,000,000	14,100,000	16.7	4.7
3	24,600,000	10,800,000	8.2	3.6
4	10,800,000	9,000,000	3.6	3.0
6	7,200,000	3,000,000	2.4	1.0
9	3,300,000	2,100,000	1.1	0.7
12	270,000	60,000	0.09	0.02
19	10,000	2,000	+	+
28	300	18	+	+
30	25	0	+	0
32	10	0	+	
34	0	0	+	
	Experiment 3			
0	41,000,000	31,000,000	100.0	100.0
0.3	35,000,000	23,000,000	85.5	74.2
1	9,000,000	11,000,000	23.3	38.5
2	5,800,000	6,850,000	14.2	21.1
3	3,240,000	5,560,000	7.9	17.9
5	9*	305,000	+	0.98
8	0	45,000		0.15
12	0	4,500		+
14		880		+
17		400		+
20		65		+
22		12		+
23		0		0

* See discussion

observed were quite consistent in their respective menstruums. While the difference was not great, the rate of death was invariably higher in the unfiltered than in the filtered water. By the end of 24 hours this difference was very marked. However, by the end of the third day (72 hours), this difference had begun to be less pronounced. Possibly by this time organisms or substances destructive to the bacteria had undergone death or change.

Experiment 3 is at apparent variance with the other two cited. The data for the first 7 hours, however, were consistent; as a matter of fact those for the first 24 hours were not badly out of line. It is thought probable that leaks in the paraffine coating or filtered water cell may have occurred allowing contact with the metal with resultant oligodynamic death. Earlier test experiments not included here demonstrated this lethal effect. The behavior in the

TABLE III

SURVIVAL OF ESCHERICHIA COLI SUSPENDED IN FILTERED AND UNFILTERED SEA WATER IN CELLS IMMERSED IN SEA WATER

	Viable Organisms per c.c.		*Per Cent of Initial Number*	
Days	*Filtered Sea Water*	*Unfiltered Sea Water*	*Filtered*	*Unfiltered*
0	500,000,000	500,000,000	100.0	100.0
0.4	456,000,000	435,000,000	91.2	87.1
0.8	170,000,000	155,000,000	34.1	31.0
2.0	144,500,000	125,000,000	28.9	25.0
4.0	51,500,000	37,000,000	10.3	7.4
6.0	30,500,000	23,000,000	6.1	4.6
13.0	11,000,000	10,500,000	2.2	2.1
20.0	3,750,000	2,650,000	0.75	0.53
27.0	4,200	1,750	+	+
35.0	1,200*	975		

* Membranes showing effects of exposure. Experiment discontinued.

companion cell a few inches away was consistent with other data. The experiment is included here because the survival time of 22 days is of interest.

The initial death rate of *Escherichia coli* in filtered and unfiltered sea water was quite comparable to that of *Eberthella typhosa*. After the first 7 hours, the destruction was much less rapid and the survival period indicated was much longer although this experiment could not be carried to its desired conclusion, by reason of the membrane destruction. The experiment indicates again the reliability of the species as an index of pollution in sea water as in fresh water.

SUMMARY

The experiments demonstrate the reliability and selectivity of the Wilson-Blair, bismuth-sulphite medium for typhoid isolation and quantitative studies in polluted water.

Data are presented showing rates of death of *Eberthella typhosa* and *Escherichia coli* under closely simulated natural conditions in polluted sea water. The possibility of survival of both species over a period of at least 1 month is indicated.

Escherichia coli is shown to be sufficiently resistant to sea water to serve as an indicator of pollutional conditions in such an environment.

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Control Agglutination Studies Against B. Dysenteriae on the Sera of 300 Individuals in New York City

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IN previous reports on outbreaks of Sonne-Duval dysentery [1] and atypical Flexner dysentery [2] the authors called attention to certain bizarre and unrecognized forms of the disease. Briefly, these were the asymptomatic, constipated, meningitic, and appendicular types. The asymptomatic type is diagnosed only in the course of epidemiological studies. The constipated type formed a well defined group which, paradoxically enough, were typical cases of bacillary dysentery from every other standpoint. The meningitic form occurred in children, was characterized by the usual clinical signs of meningitis, was accompanied by a labial or nasal herpes, but showed entirely negative spinal fluid findings. Subdural inoculations into rabbits in two cases did not reproduce the symptoms or any pathological lesions. The appendicular group was very striking, occurred chiefly in children, closely resembled acute appendicitis, but the operative findings in almost every case revealed a normal appendix, a mystifying mesenteric lymphadenitis and an acute inflammation of the terminal ileum. The detailed clinical and laboratory findings have been described elsewhere.[3-4]

The senior author has been privileged to examine more than 300 cases of dysentery in the New York City and Jersey City areas within the past 16 months, and a serious attempt has been made at careful follow-up and epidemiological studies. Out of this experience certain impressions have been gained.

First, bacillary dysentery is widespread along our coastal and Gulf regions as well as the Great Lakes. We called attention to the rôle played by ocean liners coming into New York, having discovered outbreaks which occurred on 3 of them and possibly a 4th.[1]

Second, the disease is frequently unrecognized even during intramural hospital outbreaks. This is particularly true with regard to Sonne-Duval dysentery in children who exhibit very little discomfort and only a slight pyrexia in spite of frequent bloody stools.

Third, inadequate bacteriological and serological studies sometimes account for the failure of diagnosis in hospitals. We have pointed out that repeated cultural, phage and serological studies must be made; that the positive culture bears an inverse relationship to phage and agglutination titer, the first commonly being negative after about the 10th day when phage and agglutination titer become positive. We have suggested careful technical attention to details in agglutination studies, using a variety of agglutinable strains (we

use Shiga, Flexner Y, atypical Flexner-Jersey City, Mt. Desert, Sonne-Duval and Park-Hiss).

Fourth, the senior author believes that he has traced a common pathogenesis for bacillary dysentery and chronic nonspecific ulcerative colitis, the latter being a most insidious disease and apparently on the increase in this country. Twenty-two cases have given laboratory evidence of a previous bacillary dysentery and a review of all the cases seen since 1925 indicates their source as being New York City, Jersey City, New Orleans, Rochester, and Chicago, all of which are endemic areas for bacillary dysentery.

Fifth, bacillary dysentery appears to be definitely increasing in incidence in the United States and should no longer be regarded as a disease indigenous to the tropics. With these facts in mind, we were prompted to study 300 control sera in the New York City area taken from individuals with no clinical evidence of bacillary dysentery.

Technical procedure—Table I illustrates a typical set-up in which 3 dilutions of each serum were tested against the following strains of *B. dysenteriae, viz.:* Flexner Y, atypical Jersey City, Mt. Desert, Sonne-Duval, and Shiga. The serum was so diluted that upon the addition of an equal quantity (0.5 c.c.) of broth culture, the resulting dilutions were 1:20, 1:40 and 1:100. The organisms were added in the form of an 18 hour, sugar-free broth culture (pH 7.0). In the actual tests it was found advantageous to test 10 sera at one time. This allowed for greater simplicity of technic and increased uniformity in the reading of the results. Incubation was carried out for 4 hours at 55° C., but final readings were taken only after the tubes had remained in the ice box over night. The readings at the time were always more distinct than those obtained immediately after incubation. A positive result was recorded in every case where definite agglutination was visible even though it was not complete. A reading of ++ or greater was considered positive. Previous to their use in the actual tests all cultures were tested for purity, for their action on carbohydrates, and for their agglutinability with known immune sera. It was also determined that the organisms were all of the S

TABLE I

PROTOCOL SHOWING SET-UP OF SERUM TO DETERMINE THE PRESENCE OF NORMAL AGGLUTININS

Tube	*Serum*	*Culture*	*Agglutination*
	4158		
1	0.5 c.c. 1:10	0.5 c.c. *B. dys.* Flex. Y	++++
2	" 1:20	" "	+++
3	" 1:50	" "	0
4	" 1:10	" *B. dys.* Flex. (JC)	++++
5	" 1:20	" "	++++
6	" 1:50	" "	+++
7	" 1:10	" *B. dys.* Mt. Desert	0
8	" 1:20	" "	0
9	" 1:50	" "	0
10	" 1:10	" *B. dys.* Shiga	++++
11	" 1:20	" "	++++
12	" 1:50	" "	0
13		" *B. dys.* Sonne-Duval	0
	" 1:10		
14	" 1:20	" "	0
15	" 1:50	" "	0
16	" Saline	" "	0
17	" "	" *B. dys.* Shiga	0
18	" "	" *B. dys.* Mt. Desert	0
19	" "	" *B. dys.* Flex. (JC)	0
20	" "	" *B. dys.* Flex. Y	0
21	" 4158–1:10	" Saline	0

Incubated 4 hours at 55° C.

TABLE II

CONTROL AGGLUTINATION STUDIES AGAINST B. DYSENTERIAE ON 300 SERA

Dilution		Organism				
		B. dys. Flex. Y	*B. dys. Flex. (JC)*	*B. dys. Mt. Desert*	*B. dys. Shiga*	*B. dys. Sonne-Duval*
1:20	Number of sera tested	300	300	300	300	300
	Number of sera agglutinating	78	59	48	56	6
	Percentage of sera agglutinating	26%	19.7%	15%	18.7%	2%
1:40	Number of sera tested	300	300	300	300	300
	Number of sera agglutinating	46	36	40	40	3
	Percentage of sera agglutinating	15.3%	12%	13.3%	13.3%	1%
1:100	Number of sera tested	300	300	300	300	300
	Number of sera agglutinating	13	17	25	13	1
	Percentage of sera agglutinating	4.3%	5.7%	8.3%	4.3%	0.3%

type. Saline, 0.85 per cent, was used as a diluent.

The results of this study are shown in Table II. It will be noted that diagnostic titers of 1:100 were obtained in 4.3 per cent against the Flexner Y and Shiga strains, in 5.7 per cent against the Jersey City strain, in 8.3 per cent against the Mt. Desert strain which is common in New York City, but in only 1 case (0.3 per cent) against *B. dysenteriae* Sonne-Duval. Inquiry revealed that the patient was suffering from an acute attack of bacillary dysentery, this case being included in our series because the diagnosis had been completely overlooked.

Two possibilities are suggested by these figures, *viz.:* first, the relatively high incidence of diagnostic agglutination titers and, therefore, presumptive evidence of a previous dysentery infection (4.58 per cent average for all strains); second, the notable absence of high titers against *B. dysenteriae* Sonne-Duval. The first observation is confirmatory, to a limited degree, of Ritchie's work [5] in which 792 sera gave a titer of 1:32 against the Shiga strain in 30 per cent and a titer of 1:64 against the Flexner strain in 41 per cent. The absence of high agglutination titers against the Sonne-Duval strain may be due to the comparatively recent introduction of this form of dysentery into New York City or to the fact, as we have noted repeatedly in our cases to date, that in most instances agglutinins produced by this organism rapidly disappear after a few weeks. We have not seen a persisting titer of 1:100 in the follow-up studies of a single recovered case in our series. Sonne [6, 7] called attention to the low titers obtained in most of his cases. Smith and Fraser,[8] moreover, regard a titer of 1:50 as diagnostic of a previous Sonne-Duval infection, a level distinctly lower than that commonly accepted for the other dysentery strains. These investigators, working in Aberdeen, where the Sonne-Duval type of dysentery is of relatively frequent occurrence, obtained a titer of 1:50 in 24 per cent of 138 normal persons. They therefore concluded that the disease was widespread in the region studied. These figures are significant therefore when compared with our control studies in the New York area. We have furnished figures, moreover, to indicate the increasing incidence of Sonne-Duval dysentery in New York City where most of the recognized cases occur in hospital outbreaks.

Working along similar lines with the dysentery skin reaction, Brokman and Popowski [9] found positive skin reactions against Shiga-Kruse toxin in 51

per cent of children up to the age of 3 years, in 27 per cent between the ages of 4 and 15 years, and in 59 per cent of adults between the ages of 16 and 23. They used 1/100 rabbit m.l.d. Using 0.1 c.c. of a 3 per cent dilution of the toxin intradermally Brokman and Przesmycki obtained positive reactions in 80 per cent of 1,000 individuals examined.[10] Neutralization tests and control studies indicated that these reactions were caused not by the injection of a foreign proteid, but by the absence of humoral antitoxins from the blood. Our series is as yet too small to permit any accurate deductions, but it appears that the positive skin reactions like agglutination titers vary considerably depending upon the prevalence of bacillary dysentery in the region studied.

In connection with agglutination studies in Sonne-Duval dysentery we wish to call attention to two possible sources of error. We consider this important because we must not add inaccuracy of technical procedure to the difficulties of clinical diagnosis (for it is remarkable how comfortable some children with the bloody diarrhea of Sonne-Duval dysentery really are). Braun and Weil[11] have pointed out the lack of cross-agglutination between R and S forms. More recently Koser[12] and coworkers and Johnston and Kaake[13] have stressed this characteristic in explaining apparent paradoxical findings. Wiseman[14] and Fyfe[15] called attention to the inagglutinability of some freshly isolated Sonne-Duval strains.

It may be of interest to note the incidence of multiple agglutination titers of 1:100 in our control series. These were Mt. Desert and Shiga 1.3 per cent; Jersey City Flexner strain, Mt. Desert and Shiga 0.3 per cent; Flexner Y, Jersey City and Mt. Desert 0.3 per cent; Flexner Y, Jersey City, Mt. Desert and Shiga 0.3 per cent; Flexner Y, Jersey City and Shiga 0.3 per cent.

The duration of agglutination titers following an acute dysentery infection

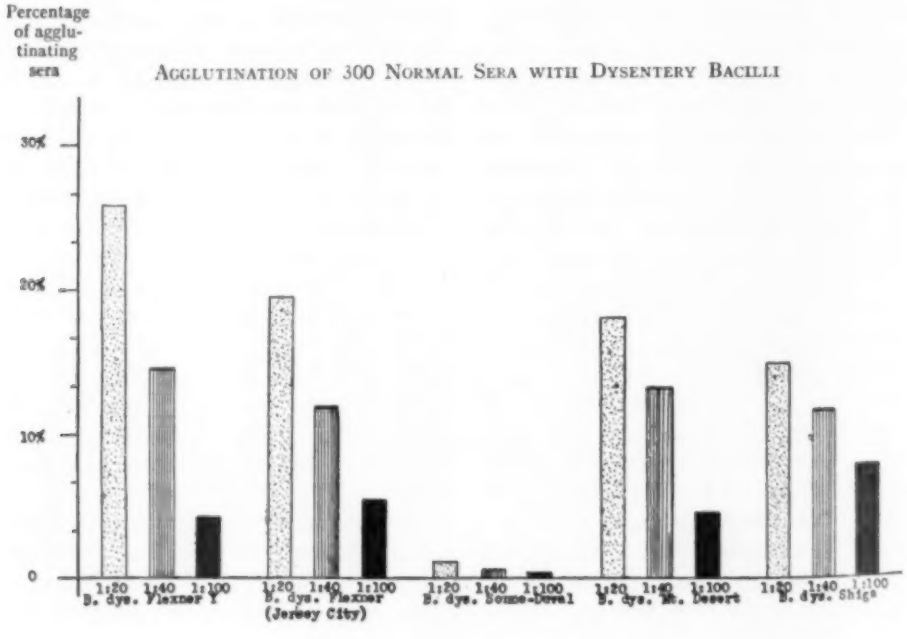

TABLE III

AGGLUTINATION TITERS IN 20 CASES OF NONSPECIFIC ULCERATIVE COLITIS

No.	Patient	Duration of Disease (years)	Titer
1	A.S.	8	Mt. Desert 1:320; Flexner Y 1:160
2	M.P.	5	Flexner Y 1:320; Mt. Desert 1:160
3	P.S.	10	Mt. Desert 1:320
4	R.H.	⅗	Mt. Desert 1:160
5	L.W.	2	Flexner Y 1:160
6	H.P.	6	Flexner (Jersey City) 1:320
7	M.B.	4	Mt. Desert 1:160
8	S.T. (child)	2	Mt. Desert 1:80
9	L.G.	4	Sonne-Duval 1:40
10	S.P.	1	Flexner Y 1:160
11	T.G.	2	Mt. Desert 1:160
12	J.D.	1⅗	Park-Hiss 1:80
13	G.E.	1	Mt. Desert 1:640
14	S.G.	7	Mt. Desert 1:160; Flexner Y 1:160
15	M.B.	⅗	Mt. Desert 1:160
16	E.G.	5	Park-Hiss 1:240; Mt. Desert 1:160
17	M.B.	3	Mt. Desert 1:160
18	B.G.	2	Park-Hiss 1:320; Flexner Y 1:160
19	M.W.	¾	Mt. Desert 1:320
20	S.K.	⅗	Flexner Y 1:160

is not definitely known. Our cured acute cases of Flexner Y and Mt. Desert dysentery followed up to date showed for the most part a persistent high titer at the end of one year. Our Sonne-Duval cases are an exception, as stated above. The follow-up on the cases of nonspecific ulcerative colitis studied by one of us [16] is very interesting. The familial incidence is high, the first 3 patients in Table III being a brother and two sisters. The evidence at hand points very strongly to the origin of this disease as a primary bacillary dysentery infection. The details of these cases have been reported.

The data herein presented indicate the prevalence of bacillary dysentery in one area on our eastern seaboard. Supplementary serological findings suggest the close etiological relationship between bacillary dysentery and nonspecific ulcerative colitis.

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A Modified Technic for the Detection of the Escherichia-Aerobacter Group in Milk

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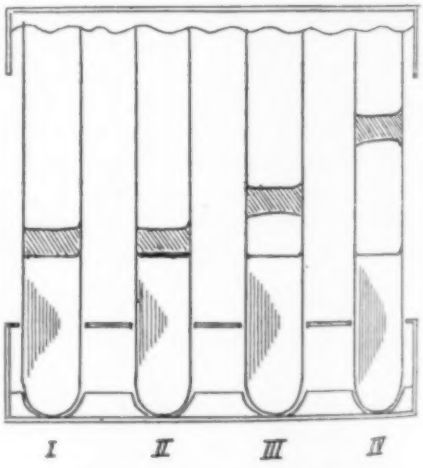
IN the 1934 edition of the A.P.H.A. *Standard Methods of Milk Analysis*, a provisional method for the detection of *Escherichia Aerobacter* organisms in milk is described with a forewarning that "discretion must be observed in the application of this determination to the specific purpose intended and particularly in the interpretation of the results obtained." [1]

Lochhead and Johns have also pointed out that "in milk analysis the coli count has not the same public health significance it has in water analysis." [2]

It is generally agreed that in most cases, positive results from samples of pasteurized milk are due to non-fecal, "dairy-bred" organisms, the presence of which indicates faulty sterilization or improper pasteurization rather than fecal contamination of human origin.

For nearly two decades the *Escherichia aerobacter* fermentation test (2 per cent bile brilliant green lactose peptone) has been carried as a complementary test to the standard plate count by the Quebec Provincial Laboratories, the Montreal Health Department, and by industrial laboratories. That it is possible under practical conditions to produce pasteurized milk consistently free from gas-forming *Escherichia aerobacter* organisms has been conclusively demonstrated by these authorities.[3]

The inverted tube (Durham) or the Smith fermentation tube technics may be used although Section H-VI of the A.P.H.A. provisional milk standards recommends the use of inverted vials. Unfortunately, the description of the technic of inoculation and distribution of the inoculum in the medium is not so elaborate as that of the standard plate method, and allows for considerable variation from one laboratory to another. While the ratio of inoculum to medium is well defined, the size and diameter of the tubes and the mixing technic are not described.



AGAR SEALED FERMENTATION TUBES

I—Negative—48 hours.
II—Positive — 8 hours (Bubbles).
III—Positive —16 hours.
IV—Positive —36 to 48 hours.

One way of determining the ratio of milk inoculum introduced into the inverted gas tube is to test its content for butter fat. The butter fat tests (in skim-milk Babcock bottles) show that the amount of milk introduced into the inverted gas tubes varies from 0.1 to 0.5 c.c. for 1 c.c. inocula, depending upon the diameter of the tubes and the degree of agitation-rotation. In the close-arm of Smith fermentation tubes the ratio is about 0.5 c.c. Positive results should not therefore be referred to as positive for 1 c.c. but as positive for less than 0.5 c.c. of milk.

To secure a greater accuracy several British and American workers are using ordinary test tubes, sealing the inoculated medium with sterile paraffin. The chief disadvantage of paraffin is that it renders cleaning of tubes very cumbersome, especially where a large number of tests is made.

Since 1931 this laboratory has used agar in preference to paraffin. The technic was demonstrated at the time to members of the A.P.H.A. Laboratory Section attending the Montreal meeting.

The tubes are filled with 9 c.c. of 2 per cent bile brilliant green lactose peptone medium (Difco) and sterilized. The plug material consists of sterile 2 per cent agar (Difco). As soon as the medium has been inoculated with 1 c.c. of milk, the tube is rolled between hands to insure a uniform distribution, 2 c.c. of the melted 2 per cent agar (45° to 55° C. according to room temperature) is poured slowly along the tube's side where it cools rapidly (37° C.), and forms a solid cylindrical plug over the medium. A certain amount of dye diffuses through the agar plug and inhibits extraneous growths. Rising milk fat in the tube acts as "piston-grease" making the agar plug practically air-tight.[4]

The advantages of this technic are the following:

Results can be reported definitely as positive or negative for 1 c.c. of milk independently of the tube's diameter or the degree of agitation.

The A.P.H.A. provisional method calls for a 48 hours' incubation period so that under practical conditions 3 days have elapsed before any action can be taken to correct the source of contamination, long after the milk is consumed.

In agar-plugged tubes, traces of gas (bubbles or foamy layer) will appear earlier or at any rate are more noticeable than in submerged inverted tubes. In positive samples, gas will be detected within 16 hours and in cases of gross contamination within 8 hours, so that early action can be taken as regards equipment sterilization. In exceptionally serious cases, the contaminated milk supply may be condemned before it is actually distributed.

Another minor advantage is the greater ease with which tubes can be thoroughly cleaned as compared with the cleaning of greasy and stained small inverted tubes or Smith tubes.

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Simultaneous Immunization Against Smallpox and Diphtheria*

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THE practical advantages of immunizing a child against two diseases at one sitting are obvious. In private practice as well as in the mass immunizations by public health agencies, it is often difficult to have children return for successive injections. Diphtheria immunization by the one dose alum toxoid method has done much to simplify this difficulty. The simultaneous use of the one dose method of diphtheria immunization with vaccination against smallpox is herewith presented.

Multiple immunizations of this character have been found as effective as separate immunizations, and unaccompanied by any greater reactions than are produced by single injections of the respective materials.

The power of the animal body to produce specific precipitins following the injection of several antigens has been established by Hektoen and Boor; Isabolinski, Judenitch, and Karpatschewskaja; and others. In human subjects, scarlet fever vaccine and diphtheria anatoxin has been given simultaneously by Isabolinski and his coworkers; diphtheria and scarlatinal toxoid by Tsen; diphtheria anatoxin and antityphoid vaccine by Dopter; diphtheria toxin-antitoxin, typhoid vaccine, and smallpox virus by McKean; diphtheria toxoid and smallpox virus by Reckling.

Since June, 1934, we have used the simultaneous multiple method of immunization against smallpox and diphtheria in all children presented for immunization against these diseases. These children had not been previously immunized against smallpox or diphtheria.

We have tabulated the results of 100 consecutive cases of school and preschool children who were simultaneously inoculated with smallpox vaccine and alum precipitated toxoid, in Table I.

The deltoid area of each arm was thoroughly cleaned. The left arm was dried, a drop of vaccine was placed on the deltoid region. The "multiple pressure" method for vaccination was used. The skin on the right deltoid was painted with tincture of merthiolate solution, and 1 c.c. of alum precipitated toxoid was injected subcutaneously.

During the first 72 hours following the inoculations the staff nurses visited the home to ascertain whether or not there was any immediate local or constitutional reaction. There were no immediate ill effects in any of the children. There was a slight rise in temperature in two of the children noted the evening of the day of the inoculation. One child had a mild local reaction at the site of the alum precipitated toxoid inoculation. In one

* Preliminary Report.

TABLE I

STUDY OF RESULTS OF SIMULTANEOUS MULTIPLE IMMUNIZATIONS *

Age	No. Receiving Treatment	Schick		Vaccination		
		Negative	Positive	"Take"	No "Take"	Reaction
Under 1 year	8	8	0	8	0	0
1- 2 years	11	10	1	10	1	0
2- 3 years	16	15	1	15	1	1 a
3- 4 years	24	24	0	24	0	1 a
4- 5 years	16	15	1	16	0	0
5- 6 years	16	15	1	16	0	2 b-c
6- 7 years	3	3	0	3	0	0
7- 8 years	0	0	0	0	0	0
8- 9 years	2	1	1	2	0	0
9-10 years	3	3	0	3	0	0
10 years and over	1	1	0	1	0	0
	100	95	5	98	2	4

a. Slight rise in temperature evening of inoculation.
b. Pain at site of alum precipitated toxoid inoculation.
c. Vomiting on second day following inoculation.
* Material Used: Alum precipitated toxoid 15 antigenic units per c.c.; glycerinated smallpox virus vaccine.

instance the child had a vomiting spell on the second day following the administration of the simultaneous inoculations. The reactions were mild and without ill effects.

The simultaneous multiple immunization against smallpox and diphtheria did not affect the immunity or rapidity of immunity produced against diphtheria as indicated by the Schick test readings. Of those preschool and school children whose immunological status to diphtheria was unknown, 95 per cent became Schick negative after receiving the alum precipitated toxoid in our routine simultaneous multiple immunization. These results compare favorably with children who received but a single inoculation of alum precipitated toxoid. It is interesting to note that 98 per cent of the children in this group had a positive vaccination reaction.

We have compared our results of simultaneous multiple immunization with the results we have obtained from the single immunization method formerly used in diphtheria and smallpox prevention. From our files, 100 cases of preschool and school children whose immunological status to diphtheria was unknown, and who had received alum precipitated toxoid were analyzed. The reactions and the result of the Schick readings were tabulated—94 per cent of these children became Schick negative. The reactions noted were mild.

The result of vaccination against smallpox was noted in children who had previously been inoculated against diphtheria. The percentage of positive smallpox "takes" was somewhat less than in those children who received simultaneous immunization against diphtheria and smallpox.

CONCLUSION

1. The simultaneous multiple immunization against smallpox and diphtheria is a practical method applicable as a routine procedure in mass immunization as well as in private practice.

2. The simultaneous immunization against diphtheria and smallpox is a safe procedure.

3. The simultaneous immunization against diphtheria and smallpox is effective.

EDITORIAL SECTION

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GASTRIC LAVAGE FOR THE DETECTION OF TUBERCLE BACILLI IN CHILDREN

DURING the past two years a number of articles have appeared on the finding of tubercle bacilli in the gastric contents of children. Children do not raise sputum and expel it as adults do, but swallow what gets into the mouth from the air passages. It is generally assumed that tubercle bacilli found in the stomach contents have their origin in the lung. It is evident that other sources may exist, such as raw milk or a tuberculous lesion somewhere in the upper air passages or tonsils. It is possible also, though improbable, that a tuberculous lesion of the stomach may exist.

Gourley [1] examined 59 children with pulmonary tuberculosis over a period of 2½ years by gastric lavage and guinea pig inoculation, her object being to determine whether or not it was possible for children with parenchymal lesions to be free from tubercle bacilli, and also to determine when an open case becomes a closed one. Autopsies were performed on the guinea pigs from 4 to 8 weeks after inoculation and no case was considered positive unless tubercle bacilli were demonstrated. Thirty-one children gave negative results, and of these, 29 per cent were under 6 years, while of the positive group, 50 per cent were under this age. The intracutaneous tuberculin test was positive in all the negative cases. Of the 28 children who gave positive results by gastric lavage all had run favorable clinical courses. The author believes that the results, which are given in detail in the original article, indicate all types of parenchymal lesions in childhood tuberculosis are open cases, but positive conclusions are held in abeyance pending further work.

Mishulow, Kereszturi, and Hauptman [2] examined the feces and stomach contents of 60 cases with the object of studying the comparative value of methods of diagnosis. In 12 cases the feces, and in 16 the gastric contents, were positive on smear examination, 11 of the group being positive for both

feces and gastric contents. Of 44 whose gastric contents were negative on smear examination, 4 gave positive results by inoculation of guinea pigs, bringing the total number of positives by the gastric lavage method to 20, or 33⅓ per cent. The examination of feces is more practicable than gastric lavage, since it may be repeated frequently with ease.

Nalbant [3] has reported on 72 cultures and guinea pig inoculations from the feces and sputa of 65 children under 15 years of age, 24 of which showed tubercle bacilli. Nineteen showed no demonstrable parenchymal lesion by either physical or radiological examination and were considered negative as far as the lungs were concerned. Among these, tubercle bacilli were found in the sputum or feces of 7. The other 17 positives were from children with a childhood type of tuberculosis.

This author summarizes the literature on the examination of gastric contents of children and notes that of a total of 197 children without pulmonary tuberculosis, but including bone and joint cases and tuberculous meningitis, 81, or 41 per cent, showed tubercle bacilli in either the gastric contents or the feces, indicating active disease.

Hacker and Wallis [4] examined the gastric fluid of 50 children by animal inoculation, waiting an average of 40 days to make the examination of the inoculated animals. They found that 15 of the 50 children had open tuberculosis, and that younger children were positive for bacilli more often than the older ones. This they believe to be due to the fact that in younger children primary lesions are more frequent, which results in a greater tendency to form open tuberculosis.

While these studies were apparently undertaken for other reasons, such as have been mentioned, they suggest the interesting possibility that such cases may be responsible for obscure cases of infection often found in children. Nalbant believes that the organisms may come from a receding childhood type of parenchymal infiltration which cannot be detected by the X-ray but which is not yet completely free of bacilli. Another supposition is that the bacilli may come from the breaking down of a lymph node and the pouring of its contents into the bronchus from which it goes to the mouth and is then swallowed. He considers that children with tubercle bacilli in the stools and stomach are a menace to uninfected children and should be isolated in a sanatorium and treated as tuberculous. Such children should be repeatedly examined and not allowed to mix with others until bacilli free.

These interesting studies may serve to clear up some of the difficulties in tracing the origin of obscure cases, and it is evident that this method of examination should be carried out to determine when children become clinically well of their tuberculosis and free from tubercle bacilli. The wide adoption of such methods should be at least one step in the prevention of the disease.

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HUMAN INFECTION BY THE AVIAN TUBERCLE BACILLUS

THE question of human infection by the avian tubercle bacillus has come up many times and a considerable amount of material has been written concerning it. A few reports of such infection seem to be authentic. The majority of them appear to be open to question. The many ways in which man is exposed to the avian tubercle bacillus and the very few cases, even doubtful ones, which have been reported, indicate that if the avian bacillus can infect man the actual occurrence is rare.

The avian type of the bacillus has been found in eggs by a number of responsible workers. Klimmer, 1931, held that as high as 3 per cent of market eggs and 10 per cent of eggs from tuberculous fowls contained avian bacillus, but an investigation by Lichtenstein in 1932 showed that only 0.38 per cent of eggs in stores and dairies in Leipzig gave positive results. Against these reports are many in which eggs were found to be free from this infection.

Cattle are occasionally found to be infected by the avian bacillus, and during the last few years Van Es has published a number of articles showing that this type of organism is responsible for a rather high degree of infection. In specimens from 115 cattle having only isolated lesions, such as solitary lymph nodes, the avian organism was found in a little more than 12 per cent. In 258 swine with discrete lesions, the avian organism was found in 199, or 78.6 per cent. The percentage of so-called natural infection of animals varies in different countries. In England approximately 30 per cent of the localized tuberculosis in swine is due to the avian organism. Avian tuberculosis has been found in a number of animals, such as the horse, sheep, and rabbit, but is rare. It is especially liable to be found in both cattle and hogs in those cases which show discrete lesions.

The avian organism is found occasionally in milk. In one report covering 400 samples, the avian bacillus was found 9 times by culture. In this country meats are almost invariably cooked before being eaten. Eggs offer a slight possibility of infection, and also milk, but at worst the opportunities do not seem to be excessive.

Branch,[1] in 1931, made a study of the literature for what he considers authenticated cases. He has found 14, 5 of which were renal tuberculosis, 1 of pulmonary involvement; 1 splenic involvement; 1 lesions of mesenteric lymph nodes; 1 cutaneous abscesses; ulcers of nose, mouth and intestine; 1 ulcers of palate and of skin of nose; 1 septic fever; ulcers of tongue, lips and scrotum, swelling of knee joint; 1 ulcer of leg; 1 abscess of leg; and 1 septic fever, Pel-Ebstein's syndrome. Three of the cases occurred in poultry workers or farm hands, 4 giving a positive avian tuberculin test. In 9, the type of organism was confirmed by animal inoculation, including fowls. In only one case is an autopsy recorded. Branch gives many references, but apparently he does not consider any other cases authentic or as having been proved.

In 1926,[2] there were reported by Mayo and Hendricks 2 cases which they claimed were "demonstrated surgically and pathologically" to be avian tuberculosis. The report of the pathologist was given, but no cultures were mentioned. If there is an outstanding characteristic of avian tuberculosis it is the enormous number of bacilli found in the lesions. In the absence of the cultivation of the bacillus from the lesions, these cases must be considered as lacking authenticity.

Indeed, from the variety of symptoms and lesions described in the few authentic cases one is inclined to conclude that there are no certain surgical and pathological findings.

Gloyne,[3] who has reviewed the work of Branch, states that clinical diagnosis of infection by the avian bacillus is impossible. Branch gives a number of symptoms such as " (1) long continued intermittent fever, with enlargement of the spleen, metastases in skin and lymph nodes (a type which may be confused with Hodgkin's disease or, as Löwenstein suggests, with leukaemia); (a) cutaneous lesions of four different types—(a) an aphthous septicemic form with changes in bones and joints; (b) a sarcoid form; (c) a gumma-like lesion; and (d) a local ulcerous form, the ulcers tending to heal and recur (the differential diagnosis here lies between syphilis, atypical tuberculosis, sporotrichosis or even leprosy); (3) a urogenital form in which a rapid disappearance of the bacilli following treatment with avian tuberculin has been reported."

Bacteriologically, the great diagnostic points are cultures and the inoculation of suitable animals, such as fowls and rabbits. It is suggested that as guinea pigs are more used than any other laboratory animal for diagnostic purposes, some cases of avian tuberculosis may be missed, as this animal shows slight or no susceptibility.

The tests with avian tuberculin are in some instances found to be extremely sensitive—up to 1:100,000 dilution—while old tuberculin gives a feeble or no reaction in such cases. A serological classification has also been developed by employing agglutinin absorption tests with antigens of avian tubercle bacilli.

No evidence as to the portal of entry has been determined in any human case, but the digestive tract seems to be the most logical route except in some of the skin cases occurring in those working with poultry. In birds the route of infection is typically alimentary.

The evidence indicates that the avian tubercle bacillus occasionally is found to be infective for man, but practically, as far as the writer has been able to determine, the danger is very remote. Since apes and monkeys are highly resistant to the avian bacillus, it is not unreasonable to expect a similar resistance in man.

It seems a pity, in fact it is reprehensible, that cases have been reported without adequate bacteriological study. Such cases as seem authentic indicate that the avian bacillus in man produces a low grade infection, but there are few reports of autopsies, and from a rather extensive study of the literature, one is justified in doubting the correctness of a number of the reported cases and in speaking very cautiously about avian infection in human beings.

NOTE: The study by Branch was made with reference to the reported association of the avian organism with Hodgkin's disease.

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The Open Forum

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THE WIDE OPEN SPACES

THE Executive Secretary spent the month of July in the territory of the Western Branch of the Association. The annual meeting of the Branch was held in Helena, Mont., July 1–3 under the Presidency of Walter H. Brown, M.D. An excellent program was provided and the attendance was good. Altogether there was a spendid meeting which centered quite largely on some of the special problems of the West, like Rocky Mountain spotted fever, rodent plague, and tularemia. One of the outstanding features of the program was the report by the Committee on Health Education of the Branch. The section of this report dealing with radio will appear in the October issue of the *Journal*. It is a fine example of what can be done by such a committee of a Branch.

Following the meetings in Helena there was an inspection trip to the Rocky Mountain Laboratory of the Public Health Service at Hamilton, Mont., where R. R. Parker, Ph.D., explained the special work of the Laboratory and the preparation of the vaccine against Rocky Mountain Spotted Fever.

Any who may have had doubts as to the necessity or the desirability of a Western Branch would have found their doubts removed had they been at Helena. With such a meeting it becomes possible to make available much of inspiration and information to public health workers who otherwise would be unable to attend so stimulating a meeting in their professional field. The new president of the Western Branch is W. F. Cogswell, M.D., State Health Officer of Montana. The President-elect is H. E. Young, M.D., Minister of Health of British Columbia. The next meeting of the Branch will be held in Vancouver, British Columbia, in 1936, in conjunction with the Canadian Public Health Association and several other related organizations.

AN IMPORTANT DOCUMENT

THERE is a continuing interest in the Reports of the Committee on Professional Education mentioned in the July *Journal*. These reports will be presented for consideration by the Governing Council at the Milwaukee meeting. The reports cover the subjects of professional qualifications for health officers and public health engineers. Prolonged consideration has been given to these topics for several years and the present committee under the Chairmanship of W. S. Leathers, M.D., has put much effort into these reports. There is considerable difference of opinion manifest to date and it is to be hoped that a proper group judgment can be reached in Milwaukee. By order of the Executive Board, copies of these reports as they will be submitted to the Governing Council are available on request from the Executive Secretary.

HEALTH COUNCILS IN ACTION

AMONG the Health Councils which I visited this summer, that in Tacoma, Wash., stands out, partly because it is very new, and partly because it has made striking progress since its

organization less than a year ago. A health survey was awarded Tacoma in 1934 in the City Health Conservation Contests and Carl E. Buck, Dr.P.H., made the study during the fall, recommending among other things the formation of a Health Council. An inclusive group of agencies was brought into the organization, and the account of the work so far shows that the official health department has been vastly improved by coöperative effort and the school health service has been raised to a new level. The Junior League has found the right person to serve as organizer of information on health topics for 450 local clubs and a surprising effect can be seen in making the city health conscious. A very interesting development has been the creation of classes in public speaking for local doctors and dentists with the aim of making these professional people more effective in educating the public. Along with this has gone a very comprehensive study of medical economics so that Tacoma need not depend on estimates made elsewhere in this important field.

Always on the alert for new possibilities, the Tacoma Health Council has established relationships with the Tacoma Fair Association so that there is available not only space for an exhibit of their health council activities, but there has been placed in the hands of the Council a complete censorship over all the Fair exhibits so that it will be possible to eliminate undesirable publicity and to exclude pernicious advertising on health subjects. I hope to see many cities take the initiative in this manner.

A SIGNIFICANT BIRTHDAY

THE year in which the Committee on Administrative Practice celebrates its 15th anniversary has been marked so far with many requests for health surveys and appraisals of specific activities. It would be indeed gratifying if the Association were in a position to meet all the requests for aid. It is especially noteworthy that the last 15 years have witnessed a profound change in the attitude of many official health departments which formerly very strenuously resisted any such appraisal and now welcome such a study with great eagerness, knowing from experience that there often follows a very wholesome wave of public support and appreciation.

Based on the 1934 Health Conservation Contests, free surveys have been awarded to Spokane County, Wash., and to Louisville, Ky. These will be completed during the fall by the staff, and several other localities will also be surveyed.

The Second Rural Health Conservation Contest and the Seventh City Health Conservation Contest have been announced. Field work has begun and particulars may be obtained from Dr. Buck.

WHAT OF FEDERAL AID?

IT is of great significance that the federal government has embarked on a much expanded program of federal aid to states for health services. As I watch the preparations over the United States for these new funds I am impressed that it still remains to be seen whether these very large resources are going to lift the level of professional public health or whether these funds are to be used in devious ways of partisan politics where chicanery and guile will replace the widest service to the greatest number. I am sure in advance of some areas where these funds will be wisely used, where broad public interest will transcend all considerations of private profit. In these areas the essential difference goes back to the kind of people who will administer the funds in these states. I celebrate the advantages of high minded leadership in such critical times!

CAN WE MEET THE NEED?

THESE new federal funds also throw into relief the need for more persons with high professional qualifications and I am pleased to see how thoughtfully plans are being laid for training courses for medical, nursing and engineering personnel. Whatever conclusions may eventually be reached about the required length of graduate instruction courses in public health, there must be agreement that the new personnel in this field will be much better off if they can be exposed in classroom and field to those with high professional standards. Even if these courses now must of necessity be short, there is a fine opportunity for the university departments already giving these courses to extend their influence and by this means to advance greatly the cause of good public health work.

Surely the opportunity for service which faces the American Public Health Association was never greater. It is my earnest hope that this Association may live up to the possibilities of these new days and through its many activities may add new strength and support to the busy hands of those professionally engaged in promoting our public health.

EPIGRAM

"While public health is the foundation of the happiness and prosperity of the people, and its promotion is recognized as an important function of government, how wide is the gap between what is achieved and what might be realized; how inadequate is the understanding of the public concerning the means adopted to secure the best results."—*William H. Welch.*

Coming—in the October Journal

From the Western Branch Meeting:

Campaign Against Tuberculosis in College Students
By Charles E. Shepard, M.D.

Health Information on the Air
By Alan Blanchard

The Relationship Between the Electrophoretic Migration Velocities, the Virulence and the Types of the Diphtheria-like Bacilli
By K. Pierre Dozois and K. F. Rauss

An Experimental Critique of the Allen Method of Evaluating the Bactericidal Action of Antiseptics
By Keith H. Lewis and Leo F. Rettger

New Germany Teaches Her People
By H. E. Kleinschmidt, M.D.

PUBLIC HEALTH EDUCATION*

Much Wanted at Milwaukee—A request for various types of materials, as well as program features for Milwaukee, has been circulated quite widely.

If a copy failed to reach you will you please write promptly to the New York office of the A.P.H.A.?

Possibly as Never Before—This year those who are doing any form of health education, of presentation and of interpretation of public health, need the inspiration of the Annual Meeting.

Nothing can quite take the place of what may be gained through meetings, "lobby conferences," and health education headquarters.

Here's looking for you!

Please Make It Your Headquarters—Public Health Education Headquarters will have space and equipment at Milwaukee to make it attractive and helpful to all concerned.

Please make it *your* headquarters. Come early, and come often. Make yourself known to those you will meet. Have questions to ask. Bring a full quota of ideas of your own.

There will be demonstrations and other events. Get a time table. Electrical transcriptions, amateur and other 16mm. movies, strip films will be demonstrated. Several group consultations will be held. Other features are hoped for.

The editor of this department serves as chairman of the committee in charge of headquarters. All readers of this department are invited to help by giving a certain amount of time at headquarters.

"Can It Now Be Told?"—Under this title Dr. D. B. Armstrong reviews a set of problems of almost daily concern to those who participate in health education.

In a 4 page reprint Dr. Armstrong considers when to tell the public, what to tell, and what cannot be told—because it isn't so, or we don't know. Here is Dr. Armstrong's proposed classification of "facts":

I. Assured Health Facts:
   - A. Those universally and practically applicable
   - B. Those theoretically sound but limited in application because of the imperfections in available methods, doubt as to timeliness, or for other reasons

II. Near Facts:
   - A. Those about which there is a growing certainty, though as yet no absolute scientific assurance
   - B. Those once generally accepted but about which there is an increasing element of doubt

III. Assured Health Fallacies.

Get a copy from Metropolitan Life Insurance Co., 1 Madison Ave., New York, N. Y., and re-read it, say, every September?

Preventive Medicine via Talkies—Paul A. Smith, inspector, Southern Berkshire Union Health District, 54 Castle St., Great Barrington, Mass., writes:

In connection with this year's health education activities we have thought of the possibility of using the moving picture as a

* Please address questions, samples of printed matter, criticism of anything which appears herein, etc., to Evart G. Routzahn, 130 East 22d St., New York, N. Y.

medium of teaching the public significant facts on preventive medicine. We are confident that the local theatre would be entirely coöperative if we could secure a few short interesting films of 15-20 minutes' duration. The general public now has grown so accustomed to talkies that I feel any films we secure should be of that type.

If you know of any suitable films which might be used, and where they can be obtained, we would appreciate hearing from you.

Our reply to Mr. Smith:

There are almost no talkies on health subjects in so far as we know. Such pictures not only are expensive, but they are difficult to produce.

Please write to the Metropolitan Life Insurance Co., 1 Madison Ave., New York, N. Y., about what they have.

We hope that publication of your request in *American Journal of Public Health* may bring you additional information.

A Package Library for Physicians—The package library for exhibition in local medical conferences or where physicians congregate "has been completely revised." The library is available for loan through state tuberculosis associations.

The Parent-Teacher Audience—To understand the parent-teacher audience, and to learn what that audience through its local leaders is learning about health, you will wish to see the publications of the National Congress of Parents and Teachers, including its periodical, *The National Parent-Teacher*, 1201 16th St., N.W., Washington, D. C. *15 cents* a copy.

Some recent articles:

May, 1935: Adapting food to different ages. Training children for safety. Sunburn or sun tan, by S. J. Crumbine.

June, 1935: Summer-time: a healthy time for babies. Handling the milk question. Rest and sleep in summer, by S. J. Crumbine.

July, 1935: Getting the most out of nature's boom days, by H. N. Bundesen. The road to dental health, by J. A. Tobey.

An effective feature is "It's Up To Us," a part page lesson for parents which might well be adapted to health teaching. Two pictures contrast the wise and the unwise, each with two or three line dialogue caption, plus a lower paragraph of application.

"I Give and Bequeath"—The convincing editorial which appeared under this heading in the June issue has been reprinted and mailed to members.

This department would emphasize that gifts to the A.P.H.A. render a nation-wide service. And this service reaches into the communities which have well developed public health services, much to their advantage, and at the same time is helping to bring nearer that day when every individual in every section of the country, and of all the North American countries, will benefit by public health services.

Will those who are doing health education make at least one mention of this possibility? Here and there in most communities are those who respond to the vision of a national service. And usually those who can see the larger field will not be any less interested in the local work.

Physicians Protest Radio Censorship — "Physicians Protest Commercial Radio Censorship" heads the statement presented by Dr. W. W. Bauer at a hearing before the Federal Communications Commission, May 15, 1935. In stating the handicaps now existing Dr. Bauer said:

The American Medical Association, while duly appreciating the coöperation of the broadcasting interests, nevertheless is constrained to represent to the Commission that certain practices and situations in the field of educational broadcasting require attention and should be modified if possible in the interest of the listening public.

Speakers on scientific topics are limited in what they may say, with particular reference to the following matters:

(1) Medical speakers on health topics are

not permitted to make general statements of established fact which may interfere with products advertised by radio, even when no specific product is mentioned and when the truth of the proposed statement is not in question. This is entirely aside from specific objections to certain medical advertising.

(2) Speakers are limited with respect to certain topics, particularly the important public health problem of venereal diseases, by virtue of a public taboo on mention of these topics. It is recognized that this taboo is not a creation of the radio industry, but is merely reflected by that industry. Nevertheless, it puts a great handicap in the way of public health progress. The so-called social or venereal diseases, and particularly syphilis, constitute, in the opinion of many competent observers, the most important public health problem before the United States today.

(3) Radio speakers are required to accept censorship from the owners of broadcasting facilities or incur the penalty of being barred from the air.

Dr. Bauer submitted four points which he hoped would be adopted by the Commission. In *Education By Radio*, National Committee on Education by Radio, 1201 16th St., N.W., Washington, D. C. July 11, 1935. *Free.* This little publication and this organization lead in the campaign for protection of the educational use of broadcasting. Ask to be put on their mailing list if you wish to keep in touch with developments.

No Restrictions in Ohio—Dr. A. L. Van Horn, chief of Bureau of Child Hygiene, Ohio Department of Health, Columbus, reports as follows:

For the past 3 years the State Department of Health has sponsored a weekly broadcast over station WOSU, which is owned by Ohio State University. During this time no restrictions whatever have been placed on subject matter and although no complete broadcast has been devoted to the subject of venereal diseases, still we have made frequent references to syphilis.

Recently we have expanded our health education program by radio to include three other Columbus stations (WBNS, WAIU and WCOL) so that we are now on the air 4 days a week.

Many Names for a Single Process—A process of reproduction for health education material, not widely used by health agencies, offers valuable possibilities. It is especially good when a pamphlet or other publication is to be reprinted. It offers the possibility of using a variety of ready made photographs, or sketches without making engravings. Typewriting can be substituted for printing type text.

We would like to hear from readers as to their use of this process.

Inland Printer, 205 W. Wacker Drive, Chicago, Ill. (May 1, 1935: *40 cents*) considers the subject from the standpoint of the printing trade, but several paragraphs will be helpful to laymen:

. . . the confusion of names under which the business operates—planographing, offset printing, photolithography, offset lithography, not to mention the various special names coined by individual concerns, such as "planoprint," "photolith," and so on. . . .

The word "planographing" refers to printing done from a plane surface, as distinguished from relief printing, where the letters and pictures stand out from their bases, and intaglio printing, wherein the letters and pictures are cut into the printing surface. The distinction is akin to that of birds, animals, and worms, one of which is above the earth, one on the earth's surface, and one underneath.

We might say that lithography in general is one form of planograph printing. As actually used, however, planographing has a far more restricted meaning. It refers to printing by offset, wherein simplified lithographic technic is used to do simplified types of work, most of them in black and white, many of which were previously done by letterpress. . . .

One of the biggest sales problems that offset printers have is to sell buyers of printing on using big pictures, action photographs, striking charts and graphs, and generous pen-and-ink illustrations. The general objective is to get printing buyers to tell more of their stories pictorially and graphically, and so reduce the number of words that need to be written and set in type.

The article warns the printer against "overselling" the cheapness and other

elements which need to be considered. Consultation with a reliable printer will meet these difficulties. Any process has its limitations.

Where to Get This Information?—Here is one of the many letters asking for information difficult to supply:

I shall greatly appreciate it to have a list of recent health films suitable to public health educational purposes. I should like to know the title, the size, and length of film, the producing agencies, and the cost of securing the rental of it.

I shall also appreciate to have your recommendation concerning popular health educational literature available from private agencies. What is available from the various sources, and what among this material is worth while.

No satisfactory answers are known to the writer, and no satisfactory sources of information.

Who should undertake the job?

Who will undertake the job?

Health Education in July, 1935, Journal—In *American Journal of Public Health*, July, 1935, are valuable references touching on health education.

In "Significant Aspects of a Recent Official Survey Concerning the Household Use of Milk in Philadelphia," by Egbert, pages 789–795, is a quotation from the study:

A relationship between publicity and increased milk consumption seems clear, but it cannot be concluded that it is a "cause and effect" relationship. The causal relationship may run from high consumption to knowledge of publicity, rather than from publicity to increased consumption.

Emphasizing the need for increased efforts to extend the use of milk the author says:

Too much credit cannot be given to every organization and agency that has had a part in the splendid educational work already done, and in aiding them and others to continue and increase the efforts they have made.

In "Function of the Laboratory in the Epidemiological Control of Syphilis," by Arthur, pages 845–847:

We believe that the public is developing a better understanding of the disease and that the great value of early diagnosis and prompt treatment is more generally recognized. Recent publicity even in the newspapers and by radio, with many favorable comments, shows a growing interest. Health officials should be cognizant of this slow but apparent change in attitudes and make every effort to profit from it by progressing beyond the present more or less inactive statistical period to a more active epidemiological endeavor in the control of syphilis.

In "Industrial Health: An Expensive Neglect," pages 858–859, there is emphasized a field for health education of the worker, the public, *and the legislator*.

In "The Bulletin of Hygiene," page 860, attention is called to invaluable source material.

"The Contests" in "The Open Forum," page 862, refers to the publicity value of the Health Conservation Contests.

There is a review of "Recording of Local Health Work," by Walker and Randolph, page 876, a book of great interest to those who use record data in any form of publicity.

We hope that readers of this department note each month under "Applicants for Membership" those listed for Public Health Education Section. Some of us might feel inclined to send notes of welcome, and an invitation to participate in Section sessions at the next convention.

Hygeia for August, 1935—We wonder if the following articles in *Hygeia* might not suggest topics for radio talks:

Typhoid. Abscessed ears and mastoiditis. When children and animals mix (diseases of pets). Some popular fallacies about anemia. The curious thing called allergy. Balm at the door (tale of a medicine peddler and a country doctor). Nervousness: its causes and prevention. Foods in hot weather. Why the baby has eczema. Trained dogs guide

the blind. Heart disease after middle age. Theobald Smith (a pioneer scientist). Why should your child dance? Primitive medicine (among the Zulus). Decisions as to iodized salt. Injuries and first aid to the eye. Diet and the teeth. "Jake paralysis." On the feet of little children (right shoes and stockings). New Books on health. Questions and answers.

Under "School and Health":

Thinking straight about health. Some fun with superstitions. Solving health educational problems. New health books for teachers and pupils.

A Round Table on Health Education—At a recent meeting of the Advisory Council of the Milbank Memorial Fund one session was devoted to health education. From the report by Dr. Kendall Emerson we quote several paragraphs:

With our democratic tradition we can assume that the aim of education includes at least enlightenment, the promotion of careful thinking, and the creation of a critical attitude toward the problems each generation has to face.

Thus health education aims to enlighten the individual and the community on problems of public health and preventive medicine so that to an increasing degree reason can determine actions and decisions in this field.

Efforts to modify human attitudes and conduct with respect to health fall into two categories. One consists in *teaching* the latest developments in public health; the other in *promoting* certain health measures which the individual has to accept on faith. This raises the question whether health departments in their educational programs *urge* too much and *teach* too little, and if so, whether it is feasible for a health department to do more in the line of real teaching via the medium of adult education groups.

A comprehensive health department educational program should cover at least two phases: (1) popular health education, and (2) health education for professional groups. Schools health education is omitted, for usually this is considered the function of the school authorities.

The objectives of a well rounded program of popular health education are: giving the community a general knowledge and understanding of the work of the official health agency; educating the public concerning health conservation, disease communication, and methods of safeguard; securing desirable changes in public opinion; creating a desire for new facilities; and educating the community to utilize the services of private physicians or, when financially unable, of clinics or hospitals. . . .

Some subjects should receive continuous emphasis throughout the year. For others intensive drives are the most effective.

Material used must have scientific accuracy, emotional appeal, concreteness, and simplicity.

The report notes some questions raised in the discussion, with a brief statement of the conclusions on each question.

Is health promotion the primary purpose of a health department educational program?

Should a health department do more in the nature of real teaching through organized adult education classes?

Considering that the major causes of present-day mortality center around heart disease, cancer, pneumonias, and accidents, can any health department divest itself of the responsibility of carrying on educational work in these fields?

What should be the policy of a health department in using commercial literature?

Are the present radio programs arranged by health departments effective?

Would it be practicable to prepare miniature exhibits of health department activities?

The discussion seems to have been largely in terms of the big city.

In "Policies and Procedures in Public Health," Milbank Memorial Fund, New York, N. Y.

School Health Bibliographies—The following bibliographies were revised in June, 1935:

"Health Education in Elementary Schools." For classroom teachers.

"Health Education: For Administrators and Instructors of Health Education in Junior and Senior High Schools."

"Health Education in the Rural School."

"Problems of Administration in School Health Education."

The following were revised at dates indicated:

"Some References on the School Lunch." April, 1935.

"Some References on Child Care and Training for Those Conducting Child Care Classes in Secondary Schools or Parent-Teacher Groups." Jan., 1935.

"Some Recent Contributions to Health Education." For those giving courses in health education. Oct., 1934.

"Some References on Dental Health Education." Oct., 1934.

"Supplementary Reading Materials for Health Education." Grades 1 to 9. June, 1934.

"Health Plays for School Use." Feb., 1933.

Apply for any of the above to American Child Health Association, 50 W. 50th St., New York, N. Y., *before October 1, 1935.*

These lists might well be studied by anyone preparing reading references for students, health workers, teachers, or others. The information given and the form in which it is presented are almost ideal. Surely such lists mean more and better reading by students and workers.

"A Prime Function of a Health Department"—"My editor and I agree that one of the prime functions of a health department (and when I say health department, the term includes the tuberculosis organization) is to keep the public informed regarding the activities of the organization," said City Health Officer R. L. Carlton of Winston-Salem, N. C.

Dr. Carlton, speaking before the Southern Conference of Tuberculosis Secretaries, said that this informing of the public

. . . can best be done through the medium of the newspaper by describing in readable, simple English those services which affect the common citizen in his daily life. There is no universal prescription as to how to present this picture. The people of one city may demand the sensational and unusual. However, the health worker is never justified in sacrificing accepted and proven facts for the sensational and startling portrayals of unproven and doubtful origin. He is most successful who can mix the dry language and statistics of the scientist with the highly colored portrayals of the modern commercial advertiser. We can't all do this, of course—but that is an ideal toward which we should strive. . . .

There is no lack of material for news articles. In addition to stories of the department's activities there are never ending stories of communicable disease. When it is considered that 1 out of every 25 persons in the community had some form of preventable disease last year, that every one has a friend, an acquaintance, a member of his family, or a relative who contracted a communicable disease—a preventable disease—and was absent from school, work, or activities on account of it—we must concede that public health publicity is news. Stories regarding communicable diseases are current news if made timely. We did not submit articles on summer care of babies in December; nor write vacation hints in January; we did not discuss green apple tummy ache or like food indiscretions at a time when there were no green apples, but we made our stories timely, of interest to our people because concerned with things and conditions at hand now, today, not 6 months from now.

All life is the source of public health news for the health worker who wishes to utilize it. He can begin before the child is born with stories of prenatal instruction, and follow with articles dealing with the care of babies and tell of their troubles of the horrid "second summer," of the wrong ideas so many mothers have concerning the teething bugaboo, stories of how to feed and clothe and exercise the baby and how to prevent rickets and how to give him a sunbath and what not—and a dandy piece of publicity is the story of the well baby health station and of what mothers learn to do for their babies' welfare there. Publicity can stress the protection of babies and children against smallpox and diphtheria and typhoid; it can emphasize the prevention of many other diseases; it follows with stories of the preschool child and tells what happens on account of neglecting him; then getting him ready for school is the subject of more than one news story; followed with a host of stories as to what should be done in a health way for the child in school. Periodic health examinations are entitled to some publicity. The correction of defects in children and adults can always be used as the subject of an interesting story. Early diagnosis and treatment are to be stressed. The fight against tuberculosis has only been half won and this story is applicable everywhere—not forgetting the story

of the tremendous inroads this disease makes on our young adult population. The eradication of tuberculosis from cattle and its relation to the reduction of the disease in humans is an item of interest. The family medicine chest with its simple remedies and dangerous poisons in careless array; spring and fall house cleaning, sprinkling of streets, sewage disposal, quarantine laws, school inspection, the value of public health nursing, nutrition with a dozen stories regarding the foods we should eat and how to choose them, and so on through a host of other aspects of community health and personal hygiene.

Through such publicity the health department is able to warn the community of outbreaks of communicable disease and it is able to broadcast information so the public may know when to call a doctor and what to do in a given emergency.

Watchman! What of the Night?—Several months ago a number of topics were briefly formulated in the hope that some of them could be discussed by the Section Council of the Public Health Education Section, or by the Section at the Annual Meeting.

These topics are submitted merely in the hope that local health councils, or other state and local groups of public health workers will give consideration to some of them.

Naturally we would welcome written comments for publication in this department of the *Journal*. Some readers may care to criticise or to re-word some of the proposed topics.

1. Professional ethics as touching the endorsement or sponsorship of organizations largely subsidized by commercial firms and either (1) openly acknowledged, or (2) not openly acknowledged.

2. Professional ethics in the public endorsement of a specified product—as in a radio talk.

3. Standards in the acceptance of health education material from commercial sources for (1) use with adults, (2) use with children, (3) as background material for the more or less discriminating classroom teacher.

4. Ethics and professional responsibilities in accepting membership on non-functioning committees, that is, where committee participation is merely nominal, the work of the committee being largely done for it without its members taking real responsibility in thinking out what is done or said.

5. How should the Public Health Education department of *American Journal of Public Health* handle publications issued by organizations largely subsidized by commercial firms, which fact is not openly acknowledged—with additional reference to such a combination when the organization advocates health practices, *not* scientifically accepted as true, but which further the business of the financial backers.

6. What procedures and what sources of authoritative help can be offered to health workers and to teachers for guidance in the selection of materials for adult or child teaching purposes?

7. What are some tests to be applied by public health workers when asked to serve on apparently ethical projects—such as a health exposition under commercial management—a new committee or other group for a public health purpose—and so on?

8. When may a health department or health association reproduce printed matter, radio talks, or other material already produced by another agency—what procedure should be followed—and what open acknowledgement of the source should be made?

9. What standards may be set up, on the basis of what we now know, by which a health worker may partially evaluate his health education methods and materials (that is, there are certain accepted elementary standards for reasonably good printed matter which might be set up for the printed matter of the health agency).

10. What is a public health education program? How is it different from a list or description of the activities or the materials used the past year or proposed for the coming year? In what way is the public health education program different from but a part of the program of public health activities, functions, services, or objectives of the health department or health association?

11. Is a united front or coöperative or coordinated or non-competitive health education program possible when there are two or more state-wide or city-wide health agencies, public and private, in a given territory? What are some of the recognizable difficulties? Should any one health agency in the state or city be accepted as the leader—and how should that leadership function?

12. Are private health agencies, in the effort to secure financial support, making unfair or unwise comparisons between the work of private and public agencies?

13. Are there any elementary tests which could be applied to our health education work in any if its phases or details?

14. When there is no staff member

specializing on health education—when, for example, it is stated to be the personal responsibility of the health officer—how under such circumstances will the health officer actually do health education—and *what* health education may he be expected to do?

15. Could we offer some tentative statements as to what skills or experience a man or woman should have, even when he is serving merely as a helper to the health officer who is credited with the doing of health education?

"They Do and They Don't"— So writes W. W. Bauer, Director of Bureau of Health and Public Instruction, American Medical Association.

They do and they don't. We have in our file a clipping from the *Chicago Tribune* for April 18, 1935, in which the word syphilis was not only mentioned, but headlined in connection with a meeting of the Illinois Social Hygiene Association. I am informed, though I do not have the clipping to verify, that the *Tribune* published an editorial on that subject in the same issue or perhaps a day or so later. In a clipping from the Syracuse, N. Y., *Post Standard,* March 27, 1932, entitled "Social Hygiene Vital Problem," syphilis is mentioned several times.

In the *Chicago Tribune,* April 28, 1935, appeared an article under the heading "Syphilis in U. S. on the Increase, Doctors Assert."

I am also in possession of radio talks dealing either with syphilis or gonorrhea which have been delivered over the following stations on behalf of medical societies. The figure in parentheses following the name of each station indicates the year in which the talk was broadcast:

WTIC, Hartford, Conn. (1931–32)
WBZ, Boston (1930–31–32)
WHAM, Rochester, N. Y. (1934)
WGY, Schenectady, N. Y. (1932)
WCAE, Pittsburgh (1934)
WBBM, Chicago (1930–32)
WJJD, Chicago (1931–32)
WGN, Chicago (1932)

In giving you this list I wish to assure you that I have no idea that it is complete, since there may be others; these are the ones of which I have definite knowledge.

Knoxville Has Heard about Syphilis—Health Officer Enneis, Knoxville, Tenn., sends a clipping from Knoxville *News-Sentinel,* dated June 6, 1935, with headlines as follows:

Syphilis heads list in number of cases here.
Measles come second in contagious report and then follows gonorrhea.
Bureau urges sane view.
"Conspiracy of Silence" held responsible for failure to check ailments.

Then follows this news story:

More cases of syphilis were recorded at the City Health Bureau in 1933 and 1934 than any other communicable disease, according to a recently issued report.

Gonorrhea came third in the number of cases, exceeded slightly by measles.

"A combination of circumstances accounts for this condition, the most important of which has been termed 'the conspiracy of silence' regarding the disease," says the report in regard to syphilis. "It is frequently considered the result of one's own misconduct.

HALF ARE INNOCENT

"As a matter of fact almost half of the total cases are innocently acquired marital infections and congenital syphilis.

"Weapons are already available with which syphilis might be reduced from a major to a minor problem.

"Educational campaigns against syphilis and gonorrhea are too often met with rebuffs. To be attacked effectively these diseases must be brought out into the open, frankly discussed, and fearlessly fought."

HOUSEWIVES IN MAJORITY

A classification chart included in the report, shows that in the 2 year period, 75 housewives in the age group from 20 to 49 years had syphilis as compared with 53 prostitutes. The chart shows 62 had syphilis as compared with 53 cases among female servants.

The increase in syphilis is accounted for by treatment of transients by the clinic, treatment of infected women at Camp Home, and discovery of many cases during examination of food handlers.

Dr. Enneis writes:

A few years ago this same paper published a series of articles on syphilis and gonorrhea and one article that I have on file has a headline covering three columns, in which syphilis is mentioned. I have never heard of any adverse criticism locally on account of this kind of publicity.

HEALTH EDUCATION

The references below have appeared in *Library Index,* a weekly index to

current periodical literature in the field of public health, issued by National Health Library, 50 W. 50th St., New York, N. Y.

Armstrong, D. B., M.D. Can it now be told? *Journal of Health and Physical Education* (Ann Arbor, Mich.) 6:5–8, June, 1935.

Conrad, H. L. Historical steps in the development of health education. *Mind and Body* (New Ulm, Minn.) 42:79–81, May-June, 1935.

Whitney, A. W. Progress in safety education. *Nation's Schools* (Chicago) 15:33–35, June, 1935.

MAGAZINE ARTICLES

This department will welcome from readers criticisms of popular articles on health topics, whether listed under this heading or not. In view of the wide reading given to many such articles it seems important that we record valid objections to any of them.

"The Radio Nostrum Racket," by R. L. Strout. *Nation,* 20 Vesey St., New York, N. Y. July 17, 1935. *15 cents.* "A startling exposure . . . before the Federal Communications Commission by Dr. Arthur J. Cramp, representing the American Medical Association."

"Shall It Be State Medicine?" by T. Swann Harding. *Christian Century,* 440 S. Dearborn St., Chicago, Ill. July 31, 1935. *15 cents.* "State medicine now here"; "individualism within collective system" as now in France.

"Should Medicine Be Socialized?" by Dr. M. V. Leof. *Common Sense,* 315 4th Ave., New York, N. Y. Aug., 1935. *25 cents.* Asking for full governmental control and professional autonomy.

"Specter of Paralysis Stalks Carolina." "Science has weapons for the battle with this year's poliomyelitis epidemics; new vaccines are undergoing their first critical tests." *Literary Digest,* 354 4th Ave., New York, N. J. July 20, 1935. *10 cents.*

REPORTS

Interesting is the fact that so many health department reports continue to be issued without table of contents or index, thus limiting their usefulness both to general readers, and to fellow health officials and research workers.

The 20th annual report of Department of Health for La Salle, Peru, and Oglesby, at La Salle, Ill., devotes nearly two pages to the record of what "Coöperating Agencies," including organizations, professional groups, and others, have been doing for public health in those communities.

FOR EDUCATION OR REFERENCE

Usually state and local health agencies will supply sample copies of their materials to health workers, but never expect them to send free copies for distribution outside of their respective territories.

Better times and the birth rate; appendicitis and hospital facilities; the comparability of cancer death rates; health record for May, 1935. In *Statistical Bulletin,* Metropolitan Life Insurance Co., New York. June, 1935.

"Children's Bureau and Other Publications Relating to Children." Supt. of Documents, Washington, D. C. *Free.* List of publications for sale.

"Conservation of School Children's Eyes," by Dr. A. C. Snell. Reprint. Rochester and Monroe County Committee on Eye Conservation, Room 304, 277 Alexander St., Rochester, N. Y. Originally a radio talk.

"Healthy Hearts" is a reprint from *Hygeia* of 4 articles; 16 large pages; 10 illustrations. American Medical Assn., 535 N. Dearborn St., Chicago. *15 cents;* less for 25 or more copies.

"The Health-Protection Aspects of Convention Planning and Operation: Selecting the Convention City: Some Precautions to Observe," by H. N. Calver. *World Convention Dates,* 330 W. 42d St., New York. May, 1935.

"Highlights from the Nation's Accident Experience in 1934." Press material on traffic, occupational, public, and home accidents. National Safety Council, 20 N. Wacker Drive, Chicago. *Free.*

"A Project in Rural School Health Education," by R. E. Grout. Home-School Relationships. Milbank Memorial Fund, 40 Wall St., New York. A reprint.

"Skin Hazards in American Industry." One of the many scientific contributions of U. S. Public Health Service. Supt. of Documents, Washington, D. C. 54 pages. *10 cents.*

"Summer Camps: 1935." Boston Health League, 43 Tremont St., Boston. Camp standards; examination forms.

"The Venereal Disease Problem in the Colored Population of Baltimore City," by F. O. Reinhard, M.D. Reprint. City Health Dept., Baltimore, Md.

"A Veteran Volunteer State Sanitary Association," R. G. Patterson. Reprint. Ohio Public Health Assn., 72 S. 4th St., Columbus. About the Ohio State Sanitary Assn., 1880–1890.

American Social Hygiene Assn., 50 W. 50th St., New York, offers new folders: "Syphilis," "Gonorrhea," "For Expectant Mothers," "The Truth About Syphilis and Gonorrhea," and "The Medical Charlatan" (exploiter of the sick, well, ignorant, credulous). *$1.00 per 100; $5.00 per 1,000.*

Massachusetts Dept. of Health, Boston, has issued:

I Don't Want Diphtheria (4-page folder).
What's and Why's of Cancer (8 pages).
For Your Teeth and Gums (leaflet on diet).
The Care of Your Teeth (2-page leaflet).
Healthful Living for the Teens (4 pages).
A Message to Dog Owners (a slip urging antirabic injections).
Agencies Supplying Health Bulletins, Leaflets, Posters, Films (5 mimeographed pages).

TIMELY TOPICS

The Department of Agriculture, Washington, D. C., and most state agricultural colleges will supply material on pressure canning which seems to have increased importance these years when many more people are canning fruits and vegetables. The Bureau of Home Economics recently announced that

> Modern canning science says in no uncertain terms, "You can process fruits and tomatoes in the boiling water bath but you *must* can nonacid vegetables under steam pressure if you want wholesome products that will keep."

See also "Proper Processes for Home Canning," by F. W. Tanner. *J.A.M.A.* May, 1935.

Insurance companies and other safety centers issue pamphlets and placards on the prone pressure method of resuscitation from electric shock, drowning, or asphyxiation. Thus the use of this material is timely all the year round.

"Diving Helmets Are Dangerous Toys," by F. C. Mills. *Scouting*, 2 Park Ave., New York, N. Y. July, 1935. *15 cents.* A new summer safety hazard, and what to do about it.

BOOKS AND REPORTS

French **Medicine**—*By M. Laignel-Lavastine and M. Raymond Molinery. Translated by E. B. Krumbhaar, M.D. New York: Hoeber,* 1935. 168 pp. Price, $2.50.

This interesting book is another of "A Series of Primers in the History of Medicine" under the general title, "Clio Medica." Written by Frenchmen, it has been translated and edited by Dr. Krumbhaar, who has done an excellent piece of work and given a number of informative notes.

An introduction gives a short outline of what will follow; then comes the description of the first civilizing wave in Gaul, which began on the shores of the Mediterranean as a development of Phoenician, Aegean and Greek civilization, and carried matters from curative magic to the Gallo-Roman development. The Christian religion fostered curative magic to the detriment of scientific medicine. Indeed, the Church recognized the diabolic or malefic origin of certain diseases which must be exorcised. In the Gallo-Roman period which followed, the Hippocratic writings were carried throughout the Greco-Roman civilization by the power of the Roman Empire. This period was made notable by the birth of Galen in the 2nd century, A.D.

Public hygiene made astonishing advances. Ancient Rome had 14 aqueducts carrying water into the city. There were more than 800 public and private baths, and through the wars of conquest there was brought about the widespread establishment of thermal resorts. The development of military medicine in this period was remarkable, and the discovery of military hospitals shows that the sanitary service was well done even in the provinces.

There developed specialists such as oculists, otologists, dentists, gynecologists and fistula specialists. The authors feel that it is depressing that such a marvelous civilization, whose hygienic legislation has not been equaled in 20 centuries, should have been annihilated by the invasion of barbarians, and hold that the new wave of Western civilization has not yet acquired an equal perfection in certain directions.

In the third chapter we have a description of the beginning of French medicine from Clovis (465–511 A.D.) to Charles VIII (1470–1498). During this period there was a great development of hospitals brought about by the fight against leprosy on the one hand, and the application of the parable of the Good Samaritan on the other. The first French hospitals were erected along the pilgrimage routes. There are bad reports concerning the hygiene of some of these hospitals, but the authors defend many of them against the attack, and point out that at the Hôtel Dieu of Paris, 1,300 brooms were used up annually. By the 16th century the hospitals for lepers which had played such a large rôle, had very few lepers, as the disease had become rare, and in 1543, Francis I ordered the segregation of the lepers at the leper hospitals of the kingdom.

With the invasion of the barbarian hordes who destroyed the Roman Empire, civilization found refuge in the monasteries, which hastened the advance of science, but the inroads of so-called religion which became superstition, did much to hold back the scientific development of medicine.

Successive Councils forbade the clergy to spill blood, and thus brought about the separation of medicine and surgery. They decreed the incombatibility of medicine and religion, which, combined with the obligation of celibacy, turned away many pupils.

In the Middle Ages medical instruction was largely clerical, many doctors having been at first theologians. There were monks who concerned themselves with bookish medicine because they met with it in the manuscripts they read.

The School of Montpellier was founded about 738 and resembled the School of Salernum, the influence of which was noteworthy for the introduction of the lay spirit into medieval medicine. Medicine was taught at Paris in 1180. The library of the Faculty of the school in Paris was founded in 1391, and up to 1555 many gifts and purchases are recorded. Unfortunately a long decadent period began about this time which was only cleared up with the Renaissance. The faculties of Bordeaux, Lyons, Strasbourg, Nancy, Lille, Algiers, and Marseilles are described separately.

The history of the Renaissance is particularly interesting. Rabelais is given the most prominent place in medicine and Ambroise Paré in surgery, though he was far more than merely a surgeon. The further history of medicine in France is taken up by centuries, and sketches of many of the men who have made medical history are given, with illustrations.

We wish it were possible to give a longer review of this delightful work, but it must be read to be appreciated. It is well printed and has few mistakes. However, on page 2, second paragraph, Chapter II is referred to twice, whereas the second reference should be to Chapter III. We would suggest also that the dates should uniformly be given along with names. For example, Chapter III covers from "Clovis to Charles VIII," but we suspect that many, even historians, will not be able to give off-hand the date of either of these men.

Altogether the book is heartily recommended. MAZŸCK P. RAVENEL

Emotions and Bodily Changes—*By H. Flanders Dunbar, M.D., Ph.D. New York: Columbia University Press,* 1935. 595 pp. Price, $5.00.

In this carefully indexed volume, with its bibliography of 2,251 titles topically arranged, Dr. Dunbar not only presents an invaluable survey of the literature on psychosomatic relationships published in the years 1910 to 1933; she interprets the trends of medical and psychological thought in a manner which makes the book of vital importance to everyone concerned with the many phases of the problem of maintaining and restoring health.

The book is divided into three parts dealing, respectively, with orientation and methodology, comprising problems of integration and differentiation, problems of acute and chronic illness, and problems of measurement; organs and organ systems, devoting one chapter to general considerations and eleven chapters each to a specific system; and therapeutic considerations and concluding remarks.

Space permits only a summary of the general conclusions. Dr. Dunbar finds that the organismal theory, elaborated especially during the last 20 years, in biology and medical sciences (involving a new concept of the organism-environment equilibrium) is fundamental to an understanding of disease processes and is remodeling our definitions of health and disease. This general truth now needs specific factual elaboration in support of the idea of the importance of the organism as a whole, or the organism-environment as a whole. The public health official, the specialist, and the general practitioner who fails to

grasp and utilize this new concept is out of step with medical progress.

"Practically," says the author, "in the maintenance of health, we are coming more and more to realize the necessity for coöperation between physicians, especially those engaged in preventive medicine and public health activities, and specialists in the various aspects of our social organization—educators, clergymen, leaders in industry, etc."

FREDERICK W. BROWN

Science and the Public Mind—*By Benjamin C. Gruenberg, with a foreword by John C. Merriam, President, Carnegie Institution of Washington. New York: McGraw-Hill,* 1935. 196 pp. Price, $2.00.

This book is an account of an investigation made by the author into the place of science in relation to adult education and how activities in that field should be stimulated.

It is explained at the outset that "The book represents the interaction of many minds called upon to think aloud on various aspects of the relationships between that vague entity called 'science' and that perhaps even more vague something known as 'the public.'" In preparation for it there were interviews or conferences with some two hundred educators, scientists, publicists, "and a great deal of correspondence with others," including administrators of educational and other institutions. A grant was made by the Carnegie Corporation of New York to meet the cost of the study.

The volume is divided into 3 parts containing in all 16 short chapters with many subdivisions. The first part discusses the place of science in modern life, regarded from the standpoints of the individual's interests, civic and social interests, and our common or cultural interests.

The second part discusses how science can be brought to the public, including the teacher, the lecturer, the newspapers, radio, and moving pictures.

Part three, called "The Educational Situation," has to do with such topics as the public's changing interests, the failure of science to reach the public, and a summary of findings and recommendations.

In his foreword, Dr. Merriam gives a strong reason for promoting science as a method of thought and a mode of life. He says:

> In this connection it is important to note that whatever the ultimate fate of government by the people, the highest success in a system of that type can be attained only by development of a citizenry thinking continuously and effectively according to a pattern which is fundamental in science, namely, one which involves wide and clear vision, recognition of need for continuous inquiry upon great questions, and the settlement of problems on the basis of facts and logic.

Dr. Gruenberg points out that in the last 75 years science has completely changed its place in our common thought. Formerly a great mystery in the hands of a few, science has become—

> . . . a dynamic process of scrutiny and research that attacks and transforms every phase of thought and practice. The men and women who make up the active adults of our population must attend to science in one or another of its many aspects, whether they wish or not. And they do.

It is hard to understand how Dr. Gruenberg could have written a book so full of the opinions of so many people on so many details of his subject, and that he has done so well is a tribute to an editorial zeal which must be regarded as remarkable.

The book is written in a clear, crisp and highly condensed style. This is the ninth volume which Dr. Gruenberg has produced on biological or educational topics, not to speak of several of which he has been co-author or editor. He has long been favorably known in public health activities. GEORGE A. SOPER

Essentials of Feeding and Paediatric Practice—*By Henry P. Wright, B.A., M.D. New York: Oxford University Press,* 1934. 212 pp. Price, $4.25.

According to the preface, this book is intended to serve the needs of the trained nurse, the student of medicine, and the busy general practitioner. It will undoubtedly be useful to all three. The title is too inclusive: pediatric practice is a pretty large field. The most significant part of the book is that devoted to the nutrition of the infant.

A few criticisms occur to one as he glances over the chapters. The balance could be improved. The chapter on clinical and laboratory tests could largely be eliminated; the tests described are not done by the average general practitioner and anyone doing them would naturally turn to larger and more complete special volumes. The chapter on physiology tries to compress too much into too small a space. The chapter on "Rules for Isolation and Exclusion of School Children in Cases of Common Communicable Diseases" is not well advised since the matter of isolation and quarantine is under the control of the board of health, not the general practitioner, and the official rules in any given community may vary widely from those given in this book.

The chapter on therapeutics ought to prove useful for quick reference. There are a good index and several valuable tables, and the printing is good.

This is a useful little book to have on the shelf—along with others.

MERRILL E. CHAMPION

Blood Groups and Blood Transfusion—*By Alexander S. Wiener, M.D. Springfield, Ill.: Charles C. Thomas,* 1935. 220 pp. Price, $4.00.

One is tempted to refer to this work as a compend of information on the individuality of the blood for the physician and serologist. The author has adequately considered the historical, practical, medico-legal, genetic, and anthropological aspects of the subject. The importance of using the *International Classification* of blood groups is correctly emphasized. The constitution of and methods for the identification of the four major blood groups as well as the subgroups of groups A and AB, and of the less easily demonstrable groups M, N, and MN, and the little known anomalous groups, are given. The sources of error in the determination of blood groups, the indications and technic of blood transfusions are discussed.

Some fundamental yet elementary principles of genetics and biometrics as applied to the hereditary transmission and frequency of blood groups are given. In view of recent legal recognition of the use of blood grouping as a means of determining parentage, these considerations are especially valuable and opportune.

The book is well written and printed. Numerous references to original literature are included. The material is presented in a very logical and concise manner, although the author assumes that the reader is familiar with the general principles involved in the determination of the blood groups. This book is to be recommended to anyone desiring a concise and authentic statement of facts in regard to our knowledge of the individuality of the blood.

NEWELL R. ZIEGLER

Lactobacillus Acidophilus and Its Therapeutic Application—*By Leo F. Rettger, Maurice N. Levy, M.D., et al. New Haven: Yale University Press,* 1935. 203 pp. Price, $2.50.

A large part of this book is devoted to the use of acidophilus as a therapeutic agent, and as this is out of the

sphere to which the *Journal* is devoted, it will not be reviewed critically.

Approximately 50 pages are given to the history and bacteriology of the Lactobacillus genus. This is largely straight bacteriology, but clinicians and bacteriologists alike will find the discussions useful and interesting. The chapter which deals with the oral and dental types of Lactobacilli is especially so in view of the findings of Bunting and others.

For upward of 20 years studies on the intestinal flora have been going on at Yale. The present volume covers the studies of the past 4 years.

The printing and binding are excellent and the entire volume is of such interest that it will well repay the reader for the time spent on it.

MAZYCK P. RAVENEL

The Malden **Health Series** *(rev. ed.) New York: Heath,* 1935.

The Voyage of Growing Up—By Clair E. Turner, Dr.P.H., and Grace T. Hallock. 204 pp. Price, $.60.

In Training for Health—By Clair E. Turner, Dr.P.H., and Jeanie M. Pinckney. 152 pp. Price, $.60.

Community Health—By Clair E. Turner, Dr.P.H., and Georgie B. Collins. 250 pp. Price, $.84.

Physiology and Health—By Clair E. Turner, Dr.P.H. 278 pp. Price, $.96.

These books, so carefully written and edited, which since their first appearance in 1928–1929 have been popular as supplementary readers and textbooks, have come out in new dress in the revised editions. The make-up of the books is essentially the same except for several new and additional illustrations in each volume and the gay covers which will brighten up any long shelf of school books. A few chapter headings have been changed. For instance, in *Community Health* the new title of Chapter I, "Planning Your Health Program," is much more pertinent to the young reader than the abstract title, "Health." The revision of Chapter I also brings this book up to date in child health education content and procedures. The volume, too, has been revised to relate closely with the social science studies that have been introduced into the curriculum.

In the volume, *The Voyage of Growing Up*, a chapter on safety has been included. The revised treatment of the chapters on teeth and digestion are more consistent with the educational trend of teaching children facts as realities and not dressing them up by analogies.

In revising *Physiology and Health* the editors have done a commendable bit of work in transferring the experiments and activities bearing on the subject from the end to the beginning of each chapter.

ANNA B. TOWSE

What About Alcohol?—*By Emil Bogen, M.D., and Lehman W. S. Hisey. Preface by Haven Emerson, M.D. Los Angeles: Angelus Press,* 1934. 105 pp. Price, $1.50.

The introduction of this book states clearly the requisitions of such a work—the material must be truthful; scientific accuracy and reliability are important; the facts not only correct but simply and clearly told and in such a manner as to excite the interest of the reader.

The authors have given a useful book profusely and excellently illustrated, especially for the young. While they have adhered to facts they are often stated in an exaggerated form, and a number of impressions which can never be proved, and are actually not true, are given; for example, "But the person who drinks alcohol becomes as a result a worry to all of the people with whom he comes in contact"; ". . . as a person becomes more

and more used to alcohol he is apt to want it more and more . . ."; and other similar statements. One cannot but remember that in many countries, France, Italy, and Germany particularly, the use of wine and beer is habitual with the vast majority of the population, yet these countries produce much that is best in science, literature, and art. The English, who are competent handlers of stronger alcoholic beverages, control the largest empire in the world and conduct its affairs with signal ability and success.

Millions of people use alcohol in moderation throughout their lives without the dire results intimated or threatened, and some of the most famous physiologists have held that the paralysis of the higher functions pictured on page 56 is a distinct physiological rest which is beneficial to the subject.

In spite of these faults, the book is one of the best of its class. It ends with an extensive bibliography for those who wish to pursue the subject further.

MAZÝCK P. RAVENEL.

A College Textbook of Hygiene—*By Dean F. Smiley and Adrian G. Gould (rev. ed.). New York: Macmillan,* 1934. 383 pp. Price, $2.00.

This revision of a work which first appeared in 1928, consists largely in material changes of the first section, and the effort to modernize certain chapters.

In most chapters the revision is very slight, even as regards the bibliographies at the ends of chapters.

The content is divided into an introductory section touching upon heredity, bacteria and disease, and infection, one on prevention of disease, and sections on the various systems of the body, respiratory, digestive, nervous, endocrine, muscular, excretory, circulatory, genital, and special senses.

An attractive text—but rather elementary for college students. If interest is to be maintained, the student must have something into which to set his intellectual teeth.

CHARLES H. KEENE

New and Nonofficial Remedies, 1935 —*Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1935. Chicago: American Medical Association,* 1935. Cloth. 510 pp. Price, $1.50.

In this book the Council on Pharmacy and Chemistry lists and describes the medicinal preparations that it has found acceptable for general use by the medical profession. A glance at the list of the Council members and the long list of consultants appearing in the first part of the book gives ample warrant for the authority of the Council's selections.

A valuable feature of the book is the grouping of preparations in classes. Each of these is introduced by a general discussion of the group. Thus the silver preparations, the iodine preparations, the arsenic preparations, the animal organ preparations and the biologic products are each preceded by a general discussion of the particular group. These general articles compare the value of the products included in the group with similar pharmacopeial and other established drugs which it is proposed that these proprietary preparations shall supplement or supplant.

Physicians who wish to know why a given proprietary is not described in New and Nonofficial Remedies will find the "Bibliographical Index to Proprietary and Unofficial Articles not Included in N. N. R." of much value. In this section (in the back of the book) are given references to published articles dealing with preparations that have not been accepted. These include references

to the Reports of the Council, to Reports of the A. M. A. Chemical Laboratory and to articles that have appeared in *J.A.M.A.*

A. M. A. COUNCIL

Diet and Like It—*By Mabel E. Baldwin, Ph.D. New York: Appleton-Century,* 1935. 230 pp. Price, $2.50.

This is a detailed exposition of meal planning for those who wish to lose weight, and for those who do not wish to gain weight.

Part I, pp. 7-112, is devoted to menus, which offer a wide selection of nutritious and protective foods. The caloric value of each standard portion is given, and the amounts to be consumed are stated as precisely as is practicable. There is no doubt that faithful adherence to the directions will be accompanied by reduction in body weight. It should be pointed out that there are schools of thought in dietetics, as in other branches of physiology. The menus that have been assembled are entirely orthodox but they are of the low protein-vegetable type. Those who belong to the high protein school will find it necessary to modify the diets somewhat.

Part II was prepared for those who find it necessary to guard against gaining weight, and for those who are looking for guidance in methods that are safe and effective. The chapter headings, somewhat condensed, are: Body Weight, Food and Body Weight, Protective Diets, Proteins, Fats, Carbohydrates, Minerals, Vitamins, Roughage, Planning a Protective Diet, Selection of Food, and an Appendix of Numerical Values of Food Factors. The treatment is non-technical, and for all practical purposes it is satisfactory.

This book is well adapted to the readers for which it was prepared, and dietitians will find it useful for reference.

A. G. HOGAN

Guiding Your Child through the Formative Years—*By Winifred de Kok, M.R.C.S., L.R.C.P. New York: Emerson Books Inc.,* 1935. 192 pp. Price, $2.00.

An eminently readable and level-headed book is this small volume on the bringing-up of the young child. The author is a physician and herself the mother of two children whose development serves to illustrate the points she wishes to make. Nineteen chapters furnish an opportunity for wise advice on such varied topics as Weaning, Excretion, the Perfect Routine, Learning to Talk, Fears and Fancies, Sex Education, Infantile Habits, Freedom and many others.

Learned and technical discussions are, quite properly of course, conspicuously absent from this book which is evidently intended for the use of mothers; yet the background of thorough familiarity with all the modern scientific ideas concerning child care is evident in every chapter.

Some mothers may be a bit taken aback at the matter-of-fact way in which the subjects of sex and of elimination are treated but the simplicity and sincerity of it are obvious throughout; the child's point of view is fully grasped and that in itself makes for sincerity.

MERRILL E. CHAMPION

Mental Hygiene for Effective Living—*By Edwin A. Kirkpatrick. New York: Appleton-Century.* 1934. 387 pp. Price, $3.00.

Addressing himself to beginning students of Mental Hygiene, the author says in his Preface that he has gathered facts and truths from the fields of "anthropology, physiology, sociology, psychology, child study and education," that he has attempted to "temper them with common sense . . . to present the characteristics of normal functioning, and to show how variations from the normal are produced." The ma-

terial appears to have been selected on the basis of its popular appeal and practical application to the situations of everyday living, and is presented in a style both interesting and clear.

The author's approach to deviations in development and behavior through an understanding of the normal is, in itself, commendable. Throughout the book, however, there runs the tendency to overemphasize the ease with which the principles of mental hygiene may be applied to the solution of the student's own problems and to those of others whom he would help. The student, with little if any background, is advised to try out these principles on himself and his friends. This point of view runs counter to one of the most salient facts derived from the experience of the trained social worker, the psychologist, and the psychiatrist, namely, that the successful practice of mental hygiene is an art requiring a much more thorough background than can be gained from the reading of a single volume or the pursuit of a course of lectures.

In view of the author's purpose to familiarize the uninitiated with the meaning of mental hygiene it seems strange that he fails to mention the mental hygiene movement, as such, or the name of its founder, Clifford W. Beers, whose personal experiences and zeal on behalf of the mentally afflicted form the source from which have sprung the mental hygiene activities of the past 25 years. FREDERICK W. BROWN

Twelve Hours of Hygiene—*By F. L. Meredith, M.D. Philadelphia: Blakiston,* 1935. 364 pp. Price, $1.90.

The design of this book, as stated in the Preface, is to fill a need for "one-hour-one-semester courses in hygiene for college freshmen."

We like the plan of the book very much. The chapters follow in logical sequence and cover pretty nearly everything that need be given in an elementary course to freshmen. Indeed we suspect that for the average freshman some of the material is far beyond his comprehension, even though we acknowledge his need of it. For example, Chapter I contains 45 pages, under two heads, A and B—A, General Considerations, 19 pages, and B, The Ten Systems, 26 pages, either one of which is more than enough for a lesson for the average student. The same may be said for several other chapters, especially those which discuss difficult subjects such as Chapter XII, Reproduction and Sex.

There are 7 appendices, taken from will known authorities, giving the chemical composition of food materials, the phosphorus, calcium and iron content, 100-calorie portions, height-weight-age averages, etc., all of which are useful and well put.

The reviewer doubts the value of a book of this type for the purpose designated, and considers the title unfortunate. It is a good book for ready reference; the material is sound and well authenticated; and an abundance of common sense is in evidence. Each sub-title is put in the form of a question.

The book is well printed and bound, and we trust will accomplish its purpose. MAZŸCK P. RAVENEL

Laboratory Manual of the Department of Bacteriology and Immunology, *Peiping Union Medical College—Prepared under the direction of C. E. Lim. 2nd ed. Peiping, China,* 1935. 182 pp. Price, $1.50.

This is an excellent book prepared for the guidance of students and staff members. There are some features which deserve special mention. Twenty-seven pages are given to the consideration of laboratory animals and their care. This contains a useful chart giving the normal differential blood

count of all animals and one bird most likely to be used in laboratory work.

There is also a section on the examination for pathogenic fungi.

The work is well documented, in addition to which 3 pages are given to a list of reading references. It is well printed and clearly written, but unfortunately there are some errors apparently due to the printer's unfamiliarity with English; for example, on page 49, we find "paper" instead of "appear"; on page 134, "peritoneum" instead of "peritoneal"; on page 150, "altual" instead of "actual."

The book contains a great amount of valuable material well condensed, and is up to date. The only omission detected concerns the H and O agglutination. This little work can be thoroughly commended. MAZYCK P. RAVENEL

Dysentery in Denmark: A Contribution to the Bacteriology and Epidemiology of Infection with Sonne and Flexner Bacilli—*By Knud Bojlen. Copenhagen: Bianco Lunos Bogtrykkeri A/S*, 1934.

These investigations were carried out in the State Serum Institute at Copenhagen under the direction of Dr. Th. Madsen during the years 1926–1933, and are here reported in English.

After giving a comprehensive review of the literature on dysentery bacilli, the author presents the results of his own studies based upon 1,786 Sonne and 1,206 Flexner cultures obtained from more than 1,000 patients. While he found the Sonne bacilli to be serologically uniform, he was able to subdivide the newly isolated strains into 6 sub-groups on the basis of their fermentation of certain sugars. In like manner, granting that the Flexner group contains several well defined serological types with mutually differing antigen-mosaic, he found that independently they may be divided into 10 sub-groups on the basis of their fermentation reactions. Although certain of these fermentation reactions may vary after sub-culture, he maintains that they are epidemiologically constant. Hence the biochemical subdivision is useful in tracing sources and contacts.

In the epidemiological section the author first gives a review of the literature on Institutional ("Asylum") Dysentery, and then reports his own observations. These include studies carried on continuously from June, 1927, to January, 1933, in Ebberodgaard Asylum for the feebleminded, more limited studies in certain other Danish institutions, a number of house epidemics in various parts of the country, 2 milk-borne epidemics, and an intensive investigation of dysentery in a limited rural community carried on over a period of 3 years. He concludes this section with a general summary of the epidemiology of dysentery in Denmark, and a discussion of the factors involved in its maintenance and spread. On the basis of these studies, inferences are drawn with regard to the control of the disease.

This is a careful and thorough piece of work. It is undoubtedly one of the most important contributions to this subject made in recent years. It contains an excellent list of references bringing the bibliography up to date.

KENNETH F. MAXCY

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Of Human Liberty—Milk-borne epidemics totalling 40 with 1,324 cases and 44 deaths is the 1934 price we paid for the privilege of drinking raw milk. Typhoid fever ranked first in number of epidemics, but septic sore throat was far in the lead in numbers of cases affected.

CRUMBINE, S. J. Milk-Borne Epidemic Diseases in the United States and Canada. Child H. Bull. 11, 4:113 (July), 1935.

What's New About Flu—Interpandemic influenza, at least, is caused by a filtrable virus transmissible to mice and ferrets. The picture produced in the experimental animals may serve to distinguish the disease from related respiratory infections.

FRANCIS, T. Recent Advances in the Study of Influenza. J.A.M.A. 105, 4:251 (July 27), 1935.

Differentiating the Streptococci—Reasons for considering scarlet fever and erysipelas as distinct clinically and etiologically, each being caused by its own streptococcus, are convincingly set forth.

HEKTOEN, L. The Specificness of Certain Hemolytic Streptococci. J.A.M.A. 105, 1:1 (July 6), 1935.

Heat Sources and the Nose—After Leonard Hill stated originally that heat rays from dull surfaces tended to close the nostrils, whereas rays from luminous sources were "nose-openers," American and other researchers denied the claim and described the methods by which they came to the opposite conclusion. In this paper. Dr. Hill questions their researches and reasserts his original findings.

HILL, L. Nose-Opening Rays. Am. J. Hyg. 22, 1:183 (July), 1935.

More about Phage—Bacteriophage can be extracted from aqueous solutions by ether, and when partly removed, the residual phage may be restored in potency by transfer. In a second paper is described the preparation of a lytic filtrate (artificial bacteriophage) by incubating bacterial cultures, autoclaving, incubating again, and oxidizing with hydrogen peroxide.

LEMAR, J. D., and MYERS, J. T. Studies on the Nature of Bacteriophage. J. Infect. Dis. 57, 1:1 (July-Aug.), 1935.

Etiologic Factors in Heart Disease—In Chicago, 1,000 cases of heart disease were studied to determine the frequency of the various types. While most cases are readily classifiable, there are many difficulties, and the conclusion is stressed that each case is a highly individual problem with many issues to be considered.

MAHER, C. C., *et al.* Heart Disease in the Chicago Area. J.A.M.A. 105, 4:263 (July 27), 1935.

Blood Sugar and Nicotine—The "lift," so widely attributed to smoking in the latest cigarette advertising, is in reality a handicap which outraged Nature tries her best to counteract; this is the conclusion of an interesting study.

MCCORMICK, W. J. The Rôle of Glycemic Response to Nicotine. Am. J. Hyg. 22, 1:214 (July), 1935.

Applying Mathematics to Health—This discussion of the necessity of applying statistical methods to clinical observation applies with equal force

to questions of public health administration. It is a paper which all would do well to take to heart.

MITCHELL, A. G. Critical Interpretation of Clinical Observations. J.A.M.A. 105, 4:241 (July 27), 1935.

Down to Brass Tacks in Tuberculosis—In this frank and wholesome discussion of the limitations of tuberculosis prevention, the term "relaxation" instead of the gruesome "collapse" therapy is proposed. Practical possibilities in providing opportunities for discharged cases is the main theme of the paper.

VARRIER-JONES, P. A General Survey of the Tuberculosis Problem. J. State Med. 43, 7:392 (July), 1935.

Depression Decline in Rhode Island Mortality—Contains a fairly complete set of tables. The greatest percentage declines were found at the younger ages, and in the infectious diseases, intoxications, nervous, and respiratory diseases. Increases were found for cancer, rheumatic and circulatory disease rates.

ROUND, LESTER A. Reprint from the Rhode Island Registration Report, 1935.

BOOKS RECEIVED

VITALITY. A BOOK ON HEALTH FOR WOMEN AND CHILDREN. By Elizabeth Sloan Chesser. New York: Oxford, 1935. 254 pp. Price, $2.50.

HEALTH PROTECTION IN THE U.S.S.R. By N. A. Semashko. New York: Putnam, 1935. 176 pp. Price, $1.75.

KNOW THYSELF. A STUDY IN MENTAL QUALITIES. By John Fox. Philadelphia: Dorrance, 1935. 267 pp. Price, $3.00.

MENTAL HEALTH. ITS PRINCIPLES AND PRACTICE. By Frank E. Howard and Frederick L. Patry. New York: Harper, 1935. 551 pp. Price, $3.50.

HOME RULE FOR METROPOLITAN CHICAGO. By Labert Lepawsky. Chicago: University of Chicago Press, 1935. 210 pp. Price, Cloth, $2.00; Paper, $.50.

THE HUMAN MACHINE. ITS USES AND ABUSES. By Lorena M. Breed. Boston: Stratford, 1934. 101 pp. Price, $1.50.

THINKING ABOUT MARRIAGE. By Roy A. Burkhart. New York: Association Press, 1934. 156 pp. Price, Paper, $1.00; Cloth, $1.75.

GYNECOLOGICAL AND OBSTETRICAL TUBERCULOSIS. By Edwin M. Jameson. Philadelphia: Lea & Febiger, 1935. 256 pp. Price, $3.50.

LIVING ALONG WITH HEART DISEASE. By Louis Levin. New York: Macmillan, 1935. 126 pp. Price, $1.50.

MEDICINE IN THE MIDDLE AGES. By David Riesman. New York: Hoeber, 1935. 402 pp. Price, $5.00.

THE NEW HEALTHY LIVING. Two Book Series. By C.-E. A. Winslow and Mary L. Hahn. New York: Merrill, 1935. Book I, 332 pp. Price, $.84. Book II, 460 pp. Price, $1.00.

FIFTY YEARS IN PUBLIC HEALTH. By Sir Arthur Newsholme. London: George Allen & Unwin, 1935. 415 pp. Price, $5.00.

ESSENTIALS OF FIELD SANITATION. FOR THE MEDICAL DEPARTMENT, UNITED STATES ARMY. Revised edition. Prepared by Department of Preventive Medicine, Medical Field Service School, Carlisle Barracks, Carlisle, Pa. 1935. 180 pp. Price, $.25.

LEWIS' NEW AIR CONDITIONING FOR COMFORT. By Samuel R. Lewis. 2d ed. Chicago: Keeney Publishing Co., 1935. 277 pp. Price, $2.50.

PERSONAL AND COMMUNITY HEALTH. 4th ed. Clair Elsmere Turner. St. Louis: Mosby, 1935. 680 pp. Price, $3.00.

LABORATORY MANUAL OF THE DEPARTMENT OF BACTERIOLOGY AND IMMUNOLOGY, PEIPING UNION MEDICAL COLLEGE. 2nd ed.) Prepared under the direction of C. E. Lim. 1935. Peiping, China. 182 pp. Price, $1.50.

NEW AND NONOFFICIAL REMEDIES, 1935. Articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1935. Chicago: American Medical Association, 1935. 510 pp. Price, $1.50.

DYSENTERY IN DENMARK: A Contribution to the Bacteriology and Epidemiology of Infection with Sonne and Flexner Bacilli. By Knud Bojlen. Copenhagen: Bianco Lunos Bogtrykkeri A/S, 1934.

ASSOCIATION NEWS

Sixty-Fourth Annual Meeting
Milwaukee, Wis.
October 7-10, 1935

ANNUAL MEETING INFORMATION

RAILROAD RATES FROM VARIOUS CENTERS TO MILWAUKEE, WIS.

From	*Regular Rate One-Way*	*Special Round-Trip Fare and one-third*	*Lower Berth One-Way*	*Upper Berth One-Way*
Atlanta, Ga.	$24.83	$33.11	$5.50*	$4.40*
Baltimore, Md.	30.33	40.44	8.25*	6.60*
Boston, Mass.	39.18	52.24	10.13*	8.10*
Buffalo, N. Y.	21.36	28.48	5.63*	4.50*
Chicago, Ill.	2.55	3.40	Parlor Car Seat	.50
Cincinnati, Ohio	12.81	17.08	3.75*	3.00*
Cleveland, Ohio	14.81	19.75	3.75*	3.00*
Dallas, Tex.	30.40	40.54	7.00*	5.60*
Denver, Colo.	31.64	42.19	7.25*	5.80*
Detroit, Mich.	12.36	16.48	3.75*	3.00*
Duluth, Minn.	11.30	15.07	3.00	2.40
Fort Worth, Tex.	30.40	40.54	7.00*	5.60*
Indianapolis, Ind.	9.17	12.23	3.75*	3.00*
Jacksonville, Fla.	35.02	46.70	8.00*	6.40*
Kansas City, Kans.	15.55	20.74	3.00*	2.40*
Louisville, Ky.	13.35	17.80	3.75*	3.00*
Los Angeles, Calif.	68.26	91.02	15.75*	12.60*
Memphis, Tenn.	18.86	25.15	3.75*	3.00*
Minneapolis, Minn.	6.69	8.92	2.50	2.00
Nashville, Tenn.	16.15	21.54	3.00*	2.40*
New Orleans, La.	30.68	40.91	6.75*	5.40*
New York, N. Y.	35.25	47.00	9.00*	7.20*
Omaha, Nebr.	15.51	20.68	3.00*	2.40*
Philadelphia, Pa.	32.01	42.68	8.25*	6.60*
Pittsburgh, Pa.	19.43	25.91	4.50*	3.60*
Portland, Ore.	63.92	85.23	15.75	12.60
Salt Lake City, U.	45.36	60.48	10.25*	8.20*
San Francisco, Calif.	68.26	91.02	15.75*	12.60*
Seattle, Wash.	62.17	82.90	15.75	12.60
St. Louis, Mo.	11.22	14.96	2.50*	2.00*
Washington, D. C.	30.33	40.44	8.25*	6.60*
Montreal, Can.	31.76	42.35	9.00*	7.20*
Halifax, N. S.	53.11	70.82	14.95*	11.95*
Ottawa, Can.	28.76	38.35	8.25*	6.60*
Quebec, Can.	37.41	49.88	12.00*	9.60*
Toronto, Can.	20.26	27.02	5.63*	4.50*

* To Chicago only

MILWAUKEE HOTEL RATES

Hotel	Room Capacity	Single Room		Double Room	
		Without Bath	With Bath	Without Bath	With Bath
Abbot Crest	150	$1.50–$2.00	$2.25–$3.00	$2.50–$3.00	$3.00–$4.00
Ambassador	300	....	2.50– 3.50	....	3.50– 6.00
Antlers	450	1.00– 1.75	2.00	1.50– 3.00	3.00– 4.00
Astor	230	....	2.50– 4.00	....	5.00– 8.00
Belmont	120	1.50– 2.00	2.50– 3.50	2.00– 3.00	3.00– 6.00
Carlton	90	1.50– 2.00	2.00– 2.50	2.00– 2.50	2.50– 4.50
Colonial	90	....	1.50– 2.50	....	2.00– 5.00
Globe	60	1.00– 1.50	1.75– 2.50	1.50– 3.00	2.50– 3.50
LaSalle	200	....	2.25– 3.00	....	3.00– 8.00
Martin	200	1.00– 2.00	1.50– 3.00	2.00– 3.00	2.50– 6.00
Maryland	120	1.25– 1.75	2.00– 3.00	2.00– 2.50	3.50– 5.00
Medford	310	1.50– 1.75	2.25– 3.00	2.50– 2.75	3.25– 5.50
Miller	125	1.50– 2.00	2.00– 3.00	2.50– 3.50	3.00– 5.00
New Pfister	200	2.50– 3.00	3.50– 6.00	4.00– 5.00	5.00–10.00
New Randolph	145	1.50– 1.75	2.00– 3.50	2.50– 3.00	3.50– 5.50
Plankinton	300	1.75	2.00– 5.00	2.75	3.50– 8.00
Plaza	200	....	2.00– 3.00	....	2.50– 3.50
Republican	180	1.50– 2.50	2.00– 5.00	2.50– 4.00	3.50–10.00
Royal	130	1.50– 2.00	2.00– 3.00	2.00– 3.00	2.50– 5.00
Schroeder	850	....	3.00– 5.00	....	5.00–10.00
Shorecrest	450	....	3.00– 4.00	....	5.00– 7.00
Tower	200	....	2.50– 3.00	....	3.50– 4.50
Wisconsin	450	2.00	2.50– 4.00	3.50– 4.00	4.00– 7.00

.....*(Cut off on this line and mail to the hotel of your choice)*.....

HOTEL RESERVATION BLANK FOR MILWAUKEE MEETING

AMERICAN PUBLIC HEALTH ASSOCIATION

50 WEST 50TH STREET, NEW YORK, N. Y.

OCTOBER 7–10, 1935

To .....
(Name of Hotel)

Please reserve for me ..... rooms for ..... persons for the A.P.H.A. Meeting.

Single room ..... Double room .....

Maximum rate per day for room $..... Minimum rate per day for room $.....

I expect to arrive ..... If date of arrival is changed I will notify you at least 24 hours in advance.

Please acknowledge this reservation.

Name .....

Street address .....

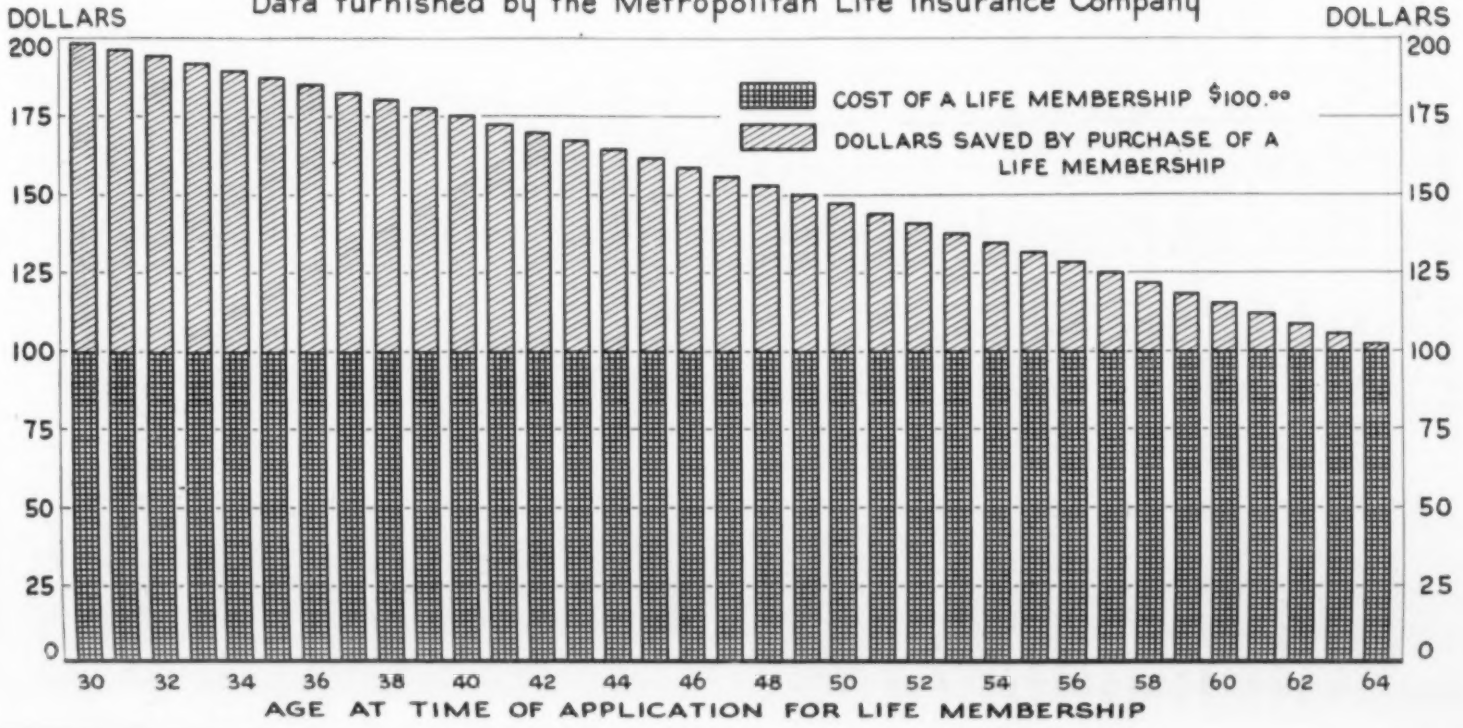
City ..... State .....

DOLLARS SAVED BY THE PURCHASE OF A LIFE MEMBERSHIP

[In place of payment of annual dues]

IN THE AMERICAN PUBLIC HEALTH ASSOCIATION

Data furnished by the Metropolitan Life Insurance Company



A WORD TO THE THRIFTY

VERY few of us, at any time, will entirely disregard an opportunity to reap a financial benefit from thrifty buying or from careful and calculated investments. Why, then, do A.P.H.A. Fellows continue to overlook the gain inherent in Life Membership? They should do so no longer.

A careful study of the chart on the opposite page will reveal the savings which will accrue to Fellows by taking Life Membership at various ages. For example, a Fellow applying for Life Membership at the age of 40 will save a little over $75. This saving (three-quarters of the cost of Life Membership) is of such proportion as to warrant careful investigation.

Beside the straight economical benefits, others accrue to Life Members: (1) annual payment of bills is onerous to some—Life Membership eliminates that; (2) in times of low income, a Life Member is assured of his continuation in the Association, thereby safeguarding for all time his professional standing; (3) a Life Member can pride himself on the high type of professional spirit he has shown by investing in the future of public health work.

Life Membership dues need not be paid at once—the payments may be spread over a year from the date of election, which takes place at each Annual Meeting.

Some may ask—What is done with the dues of Life Members? They are set up in a Life Membership Fund entirely separate from other Association funds, and only the interest therefrom is used to carry the cost of each Life Member's participation in Association activities.

It must be obvious that the advantages of Life Membership far outweigh the disadvantages. The Committee on Fellowship and Membership, therefore, urges each and every Fellow to give serious thought to the desirability of applying for Life Membership.

APPLICANTS FOR FELLOWSHIP

IN accordance with the By-laws of the Association, the names of applicants for Fellowship are officially published herewith. They have requested affiliation with the Sections indicated. Action by the various Section Councils, the Committee on Fellowship and Membership, and the Governing Council will take place between now and the Milwaukee Annual Meeting.

HEALTH OFFICERS SECTION

P. J. Crawford, M.D., C.P.H., Ancon, C. Z.
Cornelius A. Harper, M.D., Madison, Wis.
James A. Hayne, M.D., Columbia, S. C.
Leopold M. Rohr, M.D., Jamaica, N. Y.
John J. Sutter, M.D., Lima, O.
William C. Williams, M.D., C.P.H., Nashville, Tenn.

LABORATORY SECTION

Clarence N. Boynton, M.A., Phoenix, Ariz.
George J. Hucker, Ph.D., Geneva, N. Y.
Benjamin S. Levine, Ph.D., Chicago, Ill.
Kathryn R. Tirrell, B.A., Bridgeport, Conn.

VITAL STATISTICS SECTION

Marjorie Bellows, A.B., White Plains, N. Y.
Thomas J. Duffield, B.S., New York, N. Y.
Louis Weiner, E.E., New York, N. Y.

PUBLIC HEALTH ENGINEERING SECTION

Elmer W. Campbell, D.P.H., Hallowell, Me.
M. Warren Cowles, B.S., Ridgewood, N. J.
John R. Hoy, B. Chem., Jacksonville, Fla.
Charles E. Trowbridge, B.S. in S.E., New York, N. Y.
Arthur D. Weston, Newton, Mass.

INDUSTRIAL HYGIENE SECTION

Theode Saint-Martin, M.D., D.P.H., Noranda, Que.

AGE AT TIME OF APPLICATION FOR LIFE MEMBERSHIP
30 32 34 36 38 40 42

CHILD HYGIENE SECTION

C. M. Derryberry, Ph.D., New York, N. Y.

PUBLIC HEALTH EDUCATION SECTION

Midian O. Bousfield, M.D., Chicago, Ill.
J. Clarence Funk, LL.B., Harrisburg, Pa.
Marie F. Kirwan, New York, N. Y.

PUBLIC HEALTH NURSING

Helen J. Bean, M.A., Washington, D. C.
Florence I. Buchanan, Jacksonville, Ill.
Eva D. Calhoun, Cincinnati, O.
Edith S. Countryman, R.N., Des Moines, Ia.
Joyce Ely, Jacksonville, Fla.

EPIDEMIOLOGY SECTION

Charles Armstrong, M.D., Sc.D., Washington, D. C.
Lloyd Arnold, M.D., Chicago, Ill.
W. Arkell Browne, M.D., C.P.H., Richmond, Va.
Henry P. Carr, M.D., Havana, Cuba
Adrian R. Foley, M.D., Dr.P.H., Quebec, Que.
Filip C. Forsbeck, M.S., M.D., E. Lansing, Mich.
Daniel G. Gill, M.B., D.P.H., Montgomery, Ala.
Jacques P. Gray, M.D., M.P.H., San Francisco, Calif.
Benjamin G. Horning, M.D., M.S., W. Hartford, Conn.
Carl F. Jordan, M.D., C.P.H., Des Moines, Ia.
Karl F. Meyer, Ph.D., San Francisco, Calif.
Howard C. Stewart, M.D., Dr.P.H., Franklin, Tenn.
Ralph E. Wheeler, M.D., Dr.P.H., New York, N. Y.
Dorothy G. Wiehl, M.A., New York, N. Y.
Harry S. Mustard, M.D., Baltimore, Md.

UNAFFILIATED

Michael J. Bent, M.D., Nashville, Tenn.
Carolyn S. Whiting, R.N., Phoenix, Ariz.

APPLICANTS FOR MEMBERSHIP

The following individuals have applied for membership in the Association. They have requested affiliation with the sections indicated.

Health Officers Section

Emil G. Ericksen, M.D., 122½ N. Phillips Ave., Sioux Falls, S. D., Health Officer
Harry B. Franchere, M.D., Altamont, N. Y., Health Officer
Matthew H. Griswold, M.D., 75 New Britain Rd., Kensington, Conn., Health Officer of Berlin
John D. Hunter, M.D., Box 173, Crowley, La., Director, Acadia Parish Health Unit
H. J. Mann, M.D., Brockport, N. Y., Health Officer and Medical School Inspector
Edward A. McLaughlin, M.D., State Office Bldg., Providence, R. I., Director, State Department of Public Health
John C. Sleet, M.D., Health Department, Norfolk, Va., Acting Health Commissioner
Rolla B. Stafford, M.D., State Dept. of Health, Topeka, Kans., Director of Rural Health
Paul von Haeseler, M.D., Romulus, N. Y., Health Officer

Laboratory Section

Katharine E. Cox, 1812 McClung St., Charleston, W. Va., Director, State Hygienic Laboratory
Lloyd D. Felton, M.D., Harvard Medical School, Boston, Mass., Assistant Professor of Preventive Medicine and Hygiene
Gesina A. F. de Holl, M.A., 1701–16 Ave., Birmingham, Ala., Bacteriologist, Bureau of Laboratories, Jefferson County Health Dept.
Allen A. C. Nickel, M.D., Bluffton, Ind.
Wilfred J. Noonan, M.D., 14600 E. Jefferson Ave., Detroit, Mich., Research Clinic—Detroit Board of Health; Medical Director, Sherman Laboratories
Emil Weiss, M.D., 1853 W. Polk St., Chicago, Ill., Instructor of Bacteriology and Public Health, University of Illinois, College of Medicine

Vital Statistics Section

Catherine Alexander, 951 S. E. 55 Ave., Portland, Ore., Chief Clerk, Bureau of Health
T. Frederick Brunton, 197 Clarendon St., Boston, Mass., Assistant Actuary, John Hancock Mutual Life Ins. Co.
Mary E. Dalton, B.A., State Dept. of Health, Albany, N. Y., Assistant Statistician, Division of Vital Statistics
Helen D. George, A.B., 721 Gorsuch Ave., Baltimore, Md., Assistant Statistician, Bureau of Vital Statistics, State Dept. of Health
Mary Gover, D.Sc., 311 E. 30 St., Baltimore, Md., Associate Statistician, U. S. Public Health Service

Theodore A. Hill, 1707 Fairmont Ave., La Canada, Calif., Registrar of Vital Statistics, Los Angeles County Dept. of Health

Liverus H. Howe, 197 Clarendon St., Boston, Mass., Second Vice-President and Actuary, John Hancock Mutual Life Ins. Co.

Albert G. Love, M.D., Dr.P.H., Custom House, Philadelphia, Pa., Officer, Medical Corps, U. S. Army

George F. Lull, M.D., Dr.P.H., U. S. Army, Washington, D. C., Charge of Vital Statistics, Sub-Division Office of Surgeon General

Helen H. Marshall, R.N., 219 Boehne Bldg., Evansville, Ind., Executive Secretary, Vanderburgh County Tuberculosis Assn.

Vasilios G. Valaoras, M.D., C.P.H., Johns Hopkins School of Hygiene, Baltimore, Md., Student, Bio-statistics Dept.

August J. Vatter, 197 Clarendon St., Boston, Mass., Assistant Actuary, John Hancock Mutual Life Ins. Co.

Public Health Engineering Section

John J. Calman, 176 W. Adams St., Chicago, Ill., President, National Assn. of Master Plumbers

Harry H. Hendon, 216 Court House, Birmingham, Ala., Sanitary Engineer, Jefferson County

Mark D. Hollis, C.E., State Health Dept., Bismarck, N. D., Director, Division of Sanitary Engineering

Thomas D. O'Connell, 154 Norman Ave., Brooklyn, N. Y., Sanitary Inspector, New York City Dept. of Health

Food and Nutrition Section

Abraham Lichterman, Phar.D., 17 Old Orchard Rd., New Rochelle, N. Y., Inspector of Foods and Drugs

Leland S. McClung, Ph.D., American Can Co., Maywood, Ill., Research Bacteriologist

Child Hygiene Section

Thomas H. Blake, State Health Dept., Charleston, W. Va., Director, Division of Child Hygiene

Elizabeth J. Sachs, 125 De Sota St., Pittsburgh, Pa., Supervisor, Communicable Disease Dept., Children's Hospital

Public Health Education Section

Charles C. P. Anning, D.P.H., P. O. Box 89, Public Health Dept., Pietermaritzburg, S. Africa, Medical Officer of Health

Fred D. Brown, M.D., 740 N. 5th St., Richmond, Va.

Emma V. Carlsson, Ph.D., Women's College of the University of North Carolina, Greensboro, N. C., Head of Hygiene Dept.

Angus Graham, M.D., London Life Ins. Co., London, Ont., Canada, Medical Director

Fleta H. Williams, M.D., 2730 Giddings St., Chicago, Ill., School Physician, Oak Park

Public Health Nursing Section

Mary P. Billmeyer, R.N., State Board of Health, Portland, Ore., Director, Division of Public Health Nursing and Child Hygiene

Dorothy L. Campbell, R.N., Plainwell, Mich., Family Health Counselor, Allegan County Health Unit

Rhoda P. Sheldon, R.N., 268 Guy Park Ave., Amsterdam, N. Y., Rural Public Health Nurse, Fulton-Montgomery Health Unit, State Dept. of Health

Unaffiliated

Guy G. Campbell, M.D., East Gary, Ind., School Physician

Percy E. Mauzey, LL.B., 2208 W. Washington St., Phoenix, Ariz., Acting Health Officer and City Dairy Inspector

WE APOLOGIZE

We apologize for the item carried in the August News from the Field erroneously listing the death of Dr. Ralph Hendricks, Health Officer of Spokane, Wash., who, we are happy to state, is much alive.

COMMITTEE ON RESEARCH AND STANDARDS MEETING

THE Executive Committee of the Committee on Research and Standards met in the New York office on July 19. The group reviewed the activities of the committee this year.

It was reported that the Laboratory Section Committee on Standard Methods for the Examination of Dairy and Food Products is engaged in preparing a new report on Shellfish Examination. The Committee on the Control of Communicable Diseases has completed the text for a new edition, which will be issued shortly. Revisions are planned for Milk Analysis and Water Analysis.

A new Sub-committee has been established on Standard Methods for the Examination of Dishwashing Devices. This group is planning to present a preliminary report of its findings at the Milwaukee Annual Meeting.

During the year the committee has studied the many standards promulgated by the Association in past years in an attempt to determine the need for new procedures. Preparation for revision of many of the old methods has been made during the past year, with the result that many adjustments are now in sight.

Through its various sub-committees and Section committees allocated to it, the Committee on Research and Standards has coöperated with other agencies on research problems. It has assisted in the study and preparation of numerous reports. It has just appointed three members to serve on a joint committee with the American Society of Civil Engineers and the American Water Works Association to adopt standard definitions used in water works practice.

The committee will continue to act as a coördinating and stimulating agency. It believes that in this fashion it can best serve the members of the Association. It will welcome suggestions from the membership as to ways in which it can be of greater assistance to them in their problems.

The Committee on Research and Standards has been devoting all of its energies to the development of the underlying bases, both in method and in standards of quality, for administrative action in the public health field. Its concern is primarily with providing standardized tools to assist in administrative execution. The task is naturally not a spectacular one, but it does result in the provision of carefully developed yardsticks and technics of measurement, without which public health administration would not be able to function successfully.

A meeting of the Committee on Research and Standards will be held in Milwaukee during the Annual Meeting.

NEWS FROM THE FIELD

CONFERENCE OF STATE SUPERVISING NURSES

A ROUND-TABLE conference of State Supervising Nurses will be held at the Hotel Schroeder in Milwaukee, Wis., Saturday, October 5, 1935. Among the topics selected by the State Supervising Nurses for discussion are:

Public Health Nursing as a Part of the Social Security Program
Minimum Qualifications for Public Health Nurses
Rural Field Experience Centers
Regional Staff Conferences
Lay Participation in the Health Program
Working Relationships with other Official and Non-official Agencies

Since much of the discussion will center around qualifications for public health nurses and public health nurse training facilities, the State Supervisors voted to invite the directors of the accredited public health nursing courses to attend the conference also.

Twenty of the 32 states which have supervising nurses will be represented at this conference and the majority of the directors of public health nursing courses will attend. All of the delegates plan to remain in Milwaukee for the Annual Meeting of the American Public Health Association the following week.

DR. HASSELTINE STRICKEN WITH PSITTACOSIS

H. E. HASSELTINE, M.D., F. A.P.H.A., Senior Surgeon of the U. S. Public Health Service, at the Marine Hospital in San Francisco, Calif., is seriously ill with pneumonia, contracted from psittacosis while experimenting with sera for its treatment. This is the second time that he has been stricken with psittacosis, the first attack occurring in 1931 while he was making laboratory studies in San Francisco of the outbreak of the disease. . . .

Health Service officials said that, to the best of their knowledge, this was the first instance of a recurrence of the disease. . . .

Dr. Hasseltine, 26 years in the Public Health Service, has made studies of bubonic plague, parrot fever, and for 4 years worked in a leper colony at Hawaii.—*New York Times*, Aug. 3, 1935.

NEW BACTERIOLOGICAL SOCIETY FORMED IN ILLINOIS

THE Society of Illinois Bacteriologists was recently organized as a local branch of the Society of American Bacteriologists, at a meeting held in Chicago on May 8, 1935, at which the following officers were elected.

President: F. W. Tanner, Ph.D., Professor of Bacteriology, University of Illinois, Urbana, Ill.

Vice-President: Fred O. Tonney, M.D., Director of Research, Board of Health, Chicago, Ill.

Secretary-Treasurer: H. J. Shaughnessy, Ph.D., Chief, Division of Laboratories, State Department of Health, Springfield, Ill.

A governing council has been appointed by the president, to be presided over by the vice-president, which consists of representatives of the various interested groups; *i.e.*, the universities and colleges, the state and city health departments, the hospital laboratories, the commercial clinical laboratory, the packing industry, the

canners' industry, the milk industry, and any other groups which may be designated from time to time.

Active members must meet certain educational requirements and be actually engaged in the teaching or practical applications of bacteriology.

Associate members are those interested in bacteriology, but not necessarily professionally engaged in its study or application.

Two meetings a year are to be held.

The program committee, headed by Fred O. Tonney, M.D., has announced the following program for the first session on November 1, 1935.

Aims and Purposes, F. W. Tanner, Ph.D., *President*, Professor of Bacteriology, University of Illinois, Urbana, Ill.

Trends of Medical Bacteriology, A. A. Day, M.D., Professor of Bacteriology, Northwestern University, School of Medicine, Chicago, Ill.

High Points of Agricultural Bacteriology, Speaker to be selected.

What Bacteriology Means to Industry, W. Lee Lewis, Ph.D., Director, Institute of American Meat Packers, Chicago, Ill.

The outstanding character of the program for the first meeting augurs success for the new society.

ROTUNDA HOSPITAL INVITATION

ANDREW H. DAVIDSON, M.D., Master of the Rotunda Hospital, of Dublin, extends the facilities offered by the Rotunda Hospital for Postgraduate work to those members of the Association going abroad to study. The schedule giving the program of work at the Rotunda Hospital is available upon application to Dr. Davidson.

INTERNATIONAL UNION AGAINST TUBERCULOSIS

THE Executive Committee and the Council of the International Union Against Tuberculosis met in Paris, at the headquarters of the Union, July 10 and 11, under the chairmanship of Dr. Piestrzynski, Under Secretary of State for Poland. Delegates from 20 countries attended. The administrative meeting of the Council was devoted to the preparation of the program of the Conference of Lisbon, scheduled for September 8–10, 1936.

NEW ENGLAND AND NEW YORK SEWAGE WORKS ASSOCIATIONS

A JOINT meeting of the New England and New York State Sewage Works Associations will be held at the Hotel Van Curler, Schenectady, N. Y., on October 4–5.

For the technical sessions an interesting and varied series of papers has been arranged. Displays of sewage works equipment will be presented by a large number of manufacturers.

Following the famous sunrise breakfast of the New York State Sewage Works Association with round table discussion, on October 5, this time for both associations, there is scheduled an inspection of the Schenectady and Canojoharie treatment plants. Another feature of the meeting is a tour of the General Electric House of Magic, for members and their guests, on October 4.

ELI LILLY AWARD

AT the summer meeting of the American Association for the Advancement of Science in Minneapolis, the Theobald Smith Award in Medical Sciences was established by Ely Lilly & Co., of Indianapolis. The new award will be $1,000 and a bronze medal, which will be given yearly for "demonstrated research in the field of the medical sciences, taking into consideration independence of thought and originality."

Fellows of the American Association for the Advancement of Science are to submit to the permanent secretary's office in Washington, D. C., the name of a proposed recipient, with full information concerning his personality, training, and research work.

Any investigator who is less than 35 years old on January 1 of the year in which the award is to be made is eligible. Nominations must be received before May 1 each year.

The president of the association and 4 fellows will be the committee of award. The name of the winner will be announced at the summer meeting, and the presentation will be made at the winter meeting of the association.—*J.A.M.A.*, Aug. 10, 1935, p. 444.

COMMUNITY HEALTH CAMPAIGN

A NATION-WIDE publicity program is being planned by member agencies of the National Health Council, to bring about health consciousness in local communities, according to a letter sent by Dr. Louis I. Dublin, chairman of the publicity committee of the Council, to the state health officers in each of the states of the Union.

It is planned, reads the letter, that the climax of this publicity campaign will be a Colonial town meeting, held in each of about 400 cities in October or November. The slogan of the campaign is Health Today and Tomorrow. The coöperation of state and local health authorities and voluntary agencies will be a prime factor in achieving this end. This is strictly an educational campaign, not a drive for funds.

The active assistance of health officers and that of medical societies in these cities is urged, to organize in each community a local group which will conduct an inquiry into health conditions there, leading to thorough consideration of local health needs. The town meeting is to give opportunity for free discussion of problems brought to light by the local inquiries.

Most of the state health officers have promised to coöperate fully in carrying out this health-educational program of the National Health Council.

The member agencies of the National Health Council are American Heart Association, American Public Health Association, American Social Hygiene Association, American Society for the Hard of Hearing, American Society for the Control of Cancer, Conference of State and Provincial Health Authorities of North America, National Committee of Health Council Executives, National Committee for Mental Hygiene, National Organization for Public Health Nursing, National Society for the Prevention of Blindness, National Tuberculosis Association—all active members. Advisory members are American Red Cross, United States Children's Bureau, United States Public Health Service; associate members are American Nurses' Association and Foundation for Positive Health.

A manual with detailed suggestions for carrying on the health campaign, including the inquiry and holding a town meeting, is ready for distribution, and may be obtained by sending ten cents to the National Health Council, 50 West Fiftieth Street, New York City.

ILLINOIS FAIR HEALTH EXAMINATIONS

UNDER a coöperative plan of the Sangamon County medical and dental societies, local hospitals and the Illinois State Department of Health, it is planned that 1,000 children from 6 months to 2 years of age were to have complete physical examinations and mental tests at the Illinois State Fair in Springfield, Aug. 17–24.

Arrangements were made also to give chest examinations, including electrocardiograms, to from 2,000 to 3,000 adults.

NEW YORK PLANS HEALTH CENTERS

A NEW district health center to be built under a program planned by the Department of Health was begun with the laying of the cornerstone re-

cently, in the Mott Haven district of the Bronx, New York, N. Y.

The Public Works Administration provided funds for 7 of these centers, of which the Mott Haven unit will be the first.

STUDY OF MATERNAL CARE

THE Children's Bureau is now engaged in the preparation of a report on community provisions for maternal care in Hartford, Conn., where the first of what is expected to be a series of studies of this subject was recently completed. The purpose of this series of studies is to ascertain: (1) The type of maternal care received by an unselected series of mothers in different localities; and (2) the proportion of these mothers and infants having abnormal conditions or diseases.

The study was undertaken in Hartford at the invitation of the Hartford Medical Society, the Hartford Health Department, and the 4 Hartford hospitals. An advisory committee of 5 members, representing also the local hospitals, was appointed by the Medical Society.

All deliveries at 28 weeks or more gestation, occurring in Hartford to Hartford residents between May 1, 1933, and May 1, 1934, were studied, about 2,250 cases in all.

The deliveries occurring during 6 months, April, May, June, 1933, and January, February, March, 1934, were studied in detail. A special grouping of months was selected to determine whether the fact of making the study was in itself influencing the care given. Physicians who had attended the private patients were interviewed and prenatal and postnatal data secured, and permission to abstract the hospital chart obtained. Post-delivery visits were made to homes to interview mothers. At these interviews a history of the health of mother and child was taken, but no examinations were made.

The records of the Visiting Nurses Association pertaining to these cases were also studied, and items of interest from past histories were checked to hospital and clinic records where possible.

For about half of the deliveries, the delivery and immediate postpartum period was studied by means of data obtained from hospital and clinic records in the cases of hospital deliveries, and in cases of home deliveries by means of interview with the physician or midwife. A. W. H.

MUSHROOM POISONING

. . . The most deadly species of mushroom, *Amanita phalloides*, which causes more than 90 per cent of the deaths from mushroom poisoning, thrives from early June until the first autumn frosts. The flavor of this mushroom is reported to be delicious; the young specimens are the most poisonous and are also most apt to be mistaken for the edible forms by the inexperienced mycologist. Other persons, even less prudent, may ingest toxic varieties after trying various "tests" on them. One of the common kitchen examinations consists in placing a piece of bright silver in the utensil while the plants are cooking. If the silver is not tarnished, the mushrooms are considered safe for consumption. The efficacy of this worthless test is believed in by an astounding number of people.

Some of the fatalities observed in this country due to mushroom poisoning are caused by another variety of mushroom, *Amanita muscaria*. This species also is common in all parts of the United States. The action of the toxins from this type of mushroom is, apparently, more rapid than is that of the poisons present in the various forms of *Amanita phalloides*. Thus there are in general two types of mushroom

poisoning that may be encountered: the so-called rapid type (*mycetismus nervosus*), due to *Amanita muscaria*, and the delayed type (*mycetismus choleriformis*), caused by the various forms of *Amanita phalloides*.—Editorial, *J.A.M.A.*, July 6, 1935, p. 34.

CHOLERA BACTERIOPHAGE IN INDIA

THE following statements regarding the experience with the use of cholera bacteriophage in India are taken from the *Annual Report of the Director of the Eastern Bureau of the Health Organization of the League of Nations at Singapore, for 1934:*

Madras—The conclusions reached were that—

1. The prophylactic administration of bacteriophage did not reduce the attack rate.
2. The prophylactic administration did appear to lessen the mortality rate.
3. Bacteriophage was not more useful than prodiarrhea mixture in the treatment of cholera.

Assam—They conclude that "the results establish a sufficient probability in favor of a significant effect of the administration of bacteriophage to form a basis of practical policy in the treatment and prevention of cholera in villages."

Cachar—"As far as figures from reliable data can show, there is no doubt that bacteriophage is an efficacious treatment for cholera."

In Nowgong and Habiganj, cholera-dysentery bacteriophage for the treatment of all diarrheas, dysentery, and suspected cholera has been continued. In Nowgong there has been no epidemic outbreak for 4½ years, and in Habiganj for 3 successive cholera seasons.—*Pub. Health Rep.*, July 12, 1935, p. 912.

20,000 NEW YORK CHILDREN IMMUNIZED

A TEN weeks campaign for immunization of children against diphtheria, conducted by the Department of Health in Brooklyn and Manhattan, resulted in the protection of 14,591 in Brooklyn and 7,346 in Manhattan.

The New York City board of education, medical societies, Catholic school boards, and social and civic organizations of the 2 boroughs coöperated, and school children acted as special health officers to round up children under 6 years of age and have their parents sign immunization requests.

MICHIGAN HAS NEW HEALTH UNIT

THE establishment of a new health unit in Calhoun County, Mich., with Dr. Matthew R. Kinde, of Hastings, as Director, has been announced. The unit, which is a project of the W. K. Kellogg Foundation, is financed in part by appropriations of $6,000 and $3,000, respectively, by the county and state. It will open officially September 1.

Dr. Kinde, member A.P.H.A., has resigned as Health Director of Barry County to take over the new office. He has been succeeded by Robert B. Harkness, M.D., member A.P.H.A., Acting Health Officer of Eaton County for the past 3 months.—*J.A.M.A.*, July 20, 1935, p. 206.

FILM ON PUBLIC HEALTH SUBJECT

THE first motion picture, with sound and music, ever made on a public health subject is the new film called "Contacts," produced by the Hennepin County Tuberculosis Association of Minneapolis, in coöperation with the University of Minnesota.

This film shows what happens in a typical American home when there is an unsuspected case of tuberculosis within the family circle. It emphasizes the fact that tuberculosis is not inherited, that it may hide behind a mask of good health, that early cases of tuberculosis can only be located through the use of the tuberculin test and the X-ray, that every case comes

from another, and that the disease is spread among "contacts." The modern weapons in tuberculosis control, such as the use of the tuberculin skin test and the X-ray, public health education, and sanatorium treatment are reviewed in what is stated to be a highly effective panorama at the close of the picture.

"Contacts," now available to other groups and organizations, is being distributed through the National Tuberculosis Association and the Hennepin County Tuberculosis Association. It is a two-reel film made up in both 16 mm. and 35 mm.

KANSAS RESEARCH DEPARTMENT ESTABLISHED

THE establishment of a department of medical research at Bell Memorial Hospital, Kansas City, Mo., as a part of the work of the University of Kansas School of Medicine, with Dr. Ralph H. Major, Professor of Medicine, as director, has been announced. Clarence J. Weber, Ph.D., Instructor in Medicine, has been named associate in medical research.

INTERNATIONAL MEDICAL WEEK

UNDER the patronage of the Federal Council of Switzerland, an International Medical Week will be held at Montreux, September 9–14. Dr. Henry E. Sigerist, of Baltimore, is included among the speakers listed on the program; his subject will be "The Present Unrest in the Medical World."

In addition to lectures there will be clinics presented by the faculty of the University of Lausanne.

PASTEUR MEDAL AWARDED DR. KUHN

PROF. RICHARD KUHN, Director of the Institute for Chemistry in Kaiser-Wilhelm Institute for Medical Research, Heidelberg, Germany, has been awarded the Pasteur Medal by the Société de chimie biologique.

PERSONALS

DR. ARTHUR E. LIEN, of Spokane, has been appointed County Health Officer of Spokane County, Wash.

JOHN L. JONES, M.D., member A.P.H.A., until recently Assistant State Health Commissioner and Epidemiologist of Tennessee, has been appointed State Health Commissioner of Utah, to succeed Dr. T. B. Beatty, F.A.P.H.A., who has retired after many years of service. Dr. Jones is a graduate of the Harvard School of Public Health and for several years was epidemiologist in the Kentucky State Department of Health.

SOL PINCUS, F.A.P.H.A., has been appointed an additional Deputy Commissioner in the Department of Health of the City of New York. He is to head up the work carried on by the Sanitary Bureau and the Bureau of Food and Drugs. This position was created by the budget last year. From 1916 to 1923 Mr. Pincus was attached to the U. S. Public Health Service, as sanitary bacteriologist, then as sanitary engineer in various capacities, including state and district health work in the fields of water supply, milk supply, and the control of communicable diseases. In 1929–1931 Mr. Pincus was in charge of the administrative work and public health studies of the Philadelphia Hospital and Health Survey directed by Dr. Haven Emerson. He has recently been engaged in the construction and operation of public swimming pools.

THOMAS PARRAN, JR., M.D., New York State Health Commissioner, F.A.P.H.A., sailed recently for Europe, for the purpose of studying the social diseases situation in the Scandinavian countries.

KATHARINE TUCKER, R.N., F.A.P.H.A., General Director and Secretary of

the National Organization for Public Health Nursing, has accepted the position of Director of the newly organized Department of Nursing Education of the University of Pennsylvania, Philadelphia, Pa., effective September 1, 1935. The Board of Directors of the N.O.P.H.N. has appointed Alma C. Haupt, R.N., F.A.P.H.A., Acting Director, until the Board meeting in October, at which time it is hoped that a permanent successor to Miss Tucker will be named.

FRANCIS GEORGE CURTIS, M.D., F.A.P.H.A., Chairman of the Newton (Mass.) Board of Health for 42 years and one of the best known public health authorities in New England, has retired from active service. In addition to being chairman of the body, Dr. Curtis has served for many years as health officer of the City of Newton. He was first appointed to the Board of Health in 1893, and has been continuously reappointed by succeeding mayors. During the more than four decades that Dr. Curtis has supervised public health activities in Newton, he has brought his department to a high state of efficiency. For more than half of his term of service the office carried no remuneration. Previous to his connection with the Health Department, Dr. Curtis was for a number of years superintendent of the Newton Hospital, also an unpaid post. Dr. Curtis has been an active member of state, national, and international health organizations and has attended most of their conventions. He has been a member of the A.P.H.A. since 1897, and is a Charter Fellow.

BRIG. GEN. MATTHEW A. DELANEY, Commandant of Medical Field Service School, U. S. Army, Carlisle Barracks, Pa., received the honorary degree of Doctor of Science at the annual commencement of Dickinson College, Carlisle, Pa., on June 10. He is a member of the A.P.H.A.

DR. EDWARD J. FINN has been appointed to succeed Dr. Francis I. Nettleton as Health Officer of Shelton, Conn.

DR. JOHN D. MILBURN has been appointed to succeed the late Dr. Frederick T. Fitch, member A.P.H.A., as Health Officer of East Hampton, Conn.

DR. ALBERT B. MCCREARY, of the Health Department of Memphis, Tenn., has been appointed to take charge of a district health unit in Virginia, with headquarters at Eastville, Va.

DR. DONALD C. BALFOUR, Professor of Surgery, University of Minnesota Graduate School of Medicine, Rochester, Minn., has been appointed Associate Director of the Mayo Foundation, a newly created position.

LESLIE A. LAMBERT, M.D., member A.P.H.A., of Flint, Mich., has been named Health Officer of Flint, to succeed Dr. Kenneth B. Moore, who resigned to study at the University of Michigan.

CLYDE C. SLEMONS, M.D., F.A.P.H.A., of Lansing, Mich., has been reappointed Health Commissioner of Michigan.

ARTHUR E. MCCLUE, M.D., member A.P.H.A., of Charleston, W. Va., has been reappointed State Health Commissioner for a term of 4 years.

DR. THOMAS H. BLAKE, of Buffalo, has been appointed Director of the Division of Child Hygiene of the West Virginia State Department of Health.

ELROY F. MCINTYRE, M.D., member A.P.H.A., of Sante Fe, N. M., was elected President of the New Mexico Public Health Association recently.

DR. SANFORD VINCENT LARKEY, since 1930 librarian and assistant professor

of medical history and bibliography at the University of California School of Medicine, San Francisco, has been appointed Librarian of the Welch Medical Library of Johns Hopkins University, succeeding the late Dr. Fielding H. Garrison.

WILLIAM H. EATON, M.D., F.A.P.H.A., for many years Health Officer of Santa Barbara, Calif., has been succeeded by Dr. Clarence T. Roome.

DR. EUGENE H. DICKENSHIED, of Allentown, Pa., has been appointed Medical Director of Lehigh County, to succeed J. Treichler Butz, M.D.

LYMAN W. CHILDS, M.D., member A.P.H.A., has announced his retirement as Supervisor of Health Service in the Cleveland Schools. He was appointed to the Cleveland, O., school staff in 1910.

DR. ESMOND R. LONG, Director of the Laboratory of the Henry Phipps Institute of the University of Pennsylvania, Philadelphia, Pa., member A.P.H.A., has been made Director of Phipps Institute. Dr. Charles J. Hatfield, former Director, will be Associate Director, and Chairman of the Board of Directors in charge of the Institute. Dr. Henry R. M. Landis will have the title of Associate Director in charge of the Clinical and Sociological Departments.

EDWARD R. DAVIES, M.D., member A.P.H.A., of Kingwood, W. Va., has resigned as Health Officer of Preston County, to take a similar position in Baltimore. Dr. Charles Y. Moser, of Terra Alta, succeeds Dr. Davies.

AMY LOUISE HUNTER, M.D., member A.P.H.A., of New Haven, Conn., has been appointed Supervisor of the Wisconsin State Bureau of Maternity and Child Welfare, to succeed Charlotte J. Calvert, M.D., member A.P.H.A., retired.

DR. JOSEPHUS J. P. BOWDOIN, of Atlanta, Ga., has been given a life membership in the Seventh District of the Georgia Congress of Parents and Teachers "in appreciation of his service to the children of the state."

THOMAS C. GRUBB, PH.D., has been appointed a member of the Illinois State Department of Health, and will conduct research in the control and prevention of disease.

OLLIE M. GOODLOE, M.D., member A.P.H.A., of Paducah, Ky., has been appointed Health Officer of Mason County, with headquarters at Maysville, Ky.

DR. AUBREY Y. COVINGTON has been appointed Health Officer of Union County, with offices at Morganfield, Ky.

DR. JOHN H. WEAVER has been appointed Health Officer of Hope, Ark.

DR. ANDREW S. GREGG has been appointed Health Officer of Fayetteville, Ark.

DR. BENJAMIN J. TEAFORD, of Jonesville, has been appointed Health Commissioner of Bartholomew County, Ind.

DRS. WILLIAM ALLEN DECKERT, JOHN M. HAWS, and ISADORE A. SIEGEL have been appointed Health Officers in the division of maternity hygiene of the Baltimore Health Department, Baltimore, Md.

DR. JAMES L. MCCARTNEY, Director of Mental Hygiene at the Battle Creek Sanitarium, Battle Creek, Mich., has resigned to become Chief Psychiatrist at the New York State Vocational Institution on the Hudson River at West Coxsackie, N. Y., a correctional institute operated by the New York State Department of Correction for boys between the ages of 10 and 16.

DR. LINDA GAGE ROTH, Dean of Women at Battle Creek College, Battle Creek, Mich., was elected President of the Michigan Student Health Association recently.

DR. SAYERS J. MILLER has been ap-

pointed Director of the Student Health Service at Purdue University, Lafayette, Ind.; he has been acting director since the death of Dr. Oliver P. Terry.

DR. FRANK W. PARKER, JR., of San Bernardino, Calif., has been appointed District Health Officer in charge of Grant, Luna, and Hidalgo Counties, with headquarters in Silver City, N. M.

DR. FRANK J. CONAHAN, of Bethlehem, Pa., has been appointed Medical Director of Northampton County, to succeed the late Dr. Edgar M. Green.

DR. KENNETH M. LYNCH, of Charleston, S. C., has been appointed to the South Carolina State Board of Health, to succeed Dr. Robert Wilson, resigned; and Dr. Walter R. Mead, of Florence, succeeds the late Dr. William Egleston, of Hartsville, S. C.

DR. FRANCIS P. WISNER, of Marysville, Calif., has been appointed Health Officer of Sutter County, to succeed Dr. Trusten P. Peery.

DR. EDWARD J. ENGBERG, of St. Paul, Minn., for many years Secretary of the Board of Medical Examiners, was appointed a member of the Minnesota State Board of Health, to succeed the late Dr. Helen H. Hielscher. Dr. Max W. Alberts, of St. Paul, succeeds Dr. Engberg on the Medical Board.

DR. JONES L. HURST, of Dorset, O., has been appointed Health Commissioner of Ashtabula County, O., to succeed the late Dr. Walter S. Weiss, of Jefferson.

DR. J. GLENN HEMINGTON, of Uniontown, Pa., has been appointed Health Director of Fayette County, Pa.

DR. JOHN W. L. COOPER has been appointed Health Officer of Chattanooga, to succeed Dr. Frederick C. McIsaac.

DR. SAMUEL P. HALL, JR., formerly of Chickamauga, Ga., has been named Health Commissioner of Walker County, Ga., to succeed Dr. Rufus F. Payne, who resigned to accept a position with the CCC Camp at Fort Oglethorpe.

DR. HOWARD H. VOLAN, of Syracuse, N. Y., has been appointed Epidemiologist in the Syracuse Department of Health, to succeed Dr. Gregory D. Mahar, who was recently made Health Commissioner.

DR. WILLIAM A. CARRIGAN, of Society Hill, has been appointed Health Officer of Darlington County, S. C.

DR. SEDGWICK SIMONS, of Georgetown, has been appointed Health Officer of Beaufort County, S. C.

HUBERT S. JACKSON, D.D.S., of San Antonio, and Dr. William P. Harrison, of Teague, have been appointed to the Texas State Board of Health.

DR. THOMAS N. GOODSON, of San Antonio, has been appointed Health Officer of Bexar County, Tex., and Dr. Lawton C. Biggers, of Bonham, of Fannin County.

DR. HINTON D. JONEZ, of Tacoma, was recently appointed Health Officer of Pierce County, Wash., to succeed Dr. James H. Egan.

DR. ARTHUR M. SONNELAND, of Bellingham, has been appointed Health Officer of Whatcom County, Wash., succeeding Dr. Johan C. Wiik.

DEATHS

DR. RUFUS CHOATE, Washington, D. C., who began the practice of medicine as an army surgeon during the Indian campaigns and continued it for almost half a century, died July 26, at the age of 88.

DR. JAMES ARMITAGE EMERY, Acting Chief of the Biochemic Division, Bureau of Animal Industry, U. S. Department of Agriculture, Washington, D. C., died July 28, at the age of 68.

PROFESSOR JOHN WEINZIRL, of Seattle, Wash., died the latter part of June. He was a Fellow of the A.P.H.A.

FREDERICK T. FITCH, M.D., formerly Health Officer of East Hampton, Conn., member A.P.H.A., died recently.

CHARLES A. BEVAN, M.D., formerly Health Officer of West Haven, Conn., died recently. He was a life member of the A.P.H.A.

CONFERENCES

Sept. 12–14, Mississippi Valley Conference on Tuberculosis, Madison, Wis.

Sept. 20–Oct. 2, 7th International Medical Post-Graduate Congress, to be held during the World Exhibition, under the auspices of the University of Brussels, Bruxelles-Spa, Belgium.

Sept. 30–Oct. 4, American Hospital Association, St. Louis, Mo.

Sept. 30–Oct. 4, 21st National Recreation Congress, sponsored by the National Recreation Association, Chicago, Ill.

Oct. 3–5, Association of Military Surgeons of the United States, New York, N. Y.

Oct. 4, 5, Joint Meeting of the New England and New York State Sewage Works Associations, Schenectady, N. Y.

Oct. 5, Round Table Conference of State Supervising Nurses, Milwaukee, Wis.

Oct. 5–7, Conference of State Sanitary Engineers, Milwaukee, Wis.

Oct. 7–10, Sixty-fourth Annual Meeting of the American Public Health Association, Milwaukee, Wis. Headquarters: Hotel Schroeder.

Oct. 7–10, Annual Meeting of the American Association of School Physicians, Milwaukee, Wis.

Oct. 7–10, Meeting of the American Association of State Registration Executives, Milwaukee, Wis.

Oct. 7–10, Meeting of the International Society of Medical Health Officers, Milwaukee, Wis.

Oct. 7–10, State Laboratory Directors Conference, Milwaukee, Wis.

Oct. 7–10, Conference of Wisconsin Health Officers, Milwaukee, Wis.

Oct. 8–11, Meeting of the Association of Dairy, Food and Drug Officials, Milwaukee, Wis.

Oct. 10–11, Meeting of the International Association of Dairy and Milk Inspectors, Milwaukee, Wis.

Oct. 14–18, 24th Annual Safety Congress, National Safety Council, Inc., Louisville, Ky.

Oct. 28–31, 18th Annual Meeting, American Dietetic Association, Cleveland, O.

Nov. 1, First Session of the Society of Illinois Bacteriologists, Chicago, Ill.

Nov. 1, 2, School Health Conference, sponsored by the Department of School Health and Physical Education of the National Education Association, Philadelphia, Pa.

Nov. 15, 16, Sixty-first Annual Meeting, New Jersey Health and Sanitary Association, Hotel Berkeley-Carteret, Asbury Park, N. J.

Nov. 19, 20, Annual Meeting of the Southern Branch, American Public Health Association, St. Louis, Mo.

Dec. 30–Jan. 4, 1936, Winter Meeting of the American Association for the Advancement of Science and Associated Societies, St. Louis, Mo.

Apr. 22–25, 1936, National Tuberculosis Association, New Orleans, La.

May 11–15, 1936, American Medical Association Convention, Kansas City, Mo.

July 27–31, 1936, Second International Congress on Mental Hygiene, Paris.

Sept. 8–10, 1936, International Union Against Tuberculosis, Lisbon, Portugal.